

How Dark are Stalking Attitudes? An Investigation of Individual
Differences in Stalking Attitudes and Associated Behaviour Online

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Glossary of Terms

Term	Definition
DT	Dark Triad
SRAQ	Stalking Related Attitudes Questionnaire
ME	Mating Effort
ORI	Obsessive Relational Intrusion
SNS	Social Networking Site
Covert Provocation	Viewing pictures or posting comments in reference to an ex-partner, in a more ambiguous fashion, which is not inherently damaging e.g., looking through ex-partner's photos to see pictures with a new partner, and passive aggressive posting on the Facebook wall to make the ex-partner jealous or angry.
Public harassment	Intentional and public attempts to harass an ex-partner e.g., creating false Facebook pages, posting embarrassing photos of an ex-partner and spreading rumours about an ex-partner.
Venting	Venting about an ex-partner and his or her new life e.g., writing inappropriate things about them on their personal profile, over private message or on the news feed, and also directly making negative comments about the ex-partner or the relationship.
Agreeableness	Likely to forgive the wrongs that they suffered, are lenient in judging others, are willing to compromise and cooperate with others, and can easily control their temper.
Conscientiousness	Likely to work in a disciplined way toward their goals, strive for accuracy and perfection in their work, and deliberate carefully when making decisions.
Honesty-Humility	Avoid manipulating others for personal gain, feel little temptation to break rules, and feel no sense of entitlement or elevated social status.
Extraversion	Feel confident when leading or addressing groups of people, enjoy social gatherings and interactions, and experience positive feelings and energy.
Openness	Tend to be absorbed in art and nature, are curious and inquisitive about an array of topics, use their imagination freely in everyday life, and take an interest in unusual ideas.

Emotionality	Fear physical dangers, experience high levels of anxiety, need excessive emotional support from others, and feel empathy and sentimental attachments with others.
Psychopathy	Traits of impulsivity, thrill-seeking and low empathy.
Narcissism	Traits of high grandiosity, entitlement, and dominance.
Machiavellianism	Manipulative personality traits.
Love motivation	Use Tinder to find a long-term committed relationship.
Casual Sex motivation	Use Tinder for sexual needs including both online and offline sexual behaviours.
Self-worth motivation	Using Tinder to receive positive feedback about one's appearance and feeling more confident and happier as a result of receiving validation.
Thrill motivation	Experience a high level of excitement through using Tinder.
Trend motivation	The fact that Tinder is new and often used by peers is exciting.
Ease of communication motivation	Feelings of being more at ease making connections on Tinder than offline.

CHAPTER 1

Introduction to the Thesis

Why are certain individuals more likely to endorse stalking attitudes than others? Is there a relationship between stalking attitudes and an individual's online behaviour? What characterises the psychological profile of a cyberstalker?

This thesis explores individual differences in stalking attitudes and associated online behaviour. Beginning by systematically reviewing the literature on perpetrator characteristics of cyberstalkers, it then examines a number of identified variables (with a particular interest in dark personality traits), to discern whether these could predict stalking attitudes. It also investigates individuals reasons for engaging in behaviours online which could amount to stalking to discern possible motivation. Finally, the thesis critiques the stalking related attitudes questionnaire, which is used throughout. The discoveries made in the thesis form practice and research recommendations, developing our understanding of stalking and cyberstalking, creating greater awareness to inform legislation, prevention and intervention efforts. By developing this understanding, it is hoped there will be significant implications for clinicians, informing prevention, assessment and treatment approaches while also advancing legislation and security initiatives for policy makers.

Defining stalking and cyberstalking

There is currently no universally accepted definition of stalking or cyberstalking, nor a definitive anti-stalking law (Shewidan, Blaauw & Davies, 2003; "Stalking and Harassment | The Crown Prosecution Service", 2018). This is possibly because of the plethora of behaviours that could constitute stalking. Debates regarding stalking legislation have centred on the relevance of perpetrator intentions, victim consequences and whether victim distress is reasonably foreseeable (Dennison & Thomson, 2005). These characteristics differentiate stalking from harassment.

Stalking. Since the United States first criminalised stalking in the 1990s (see McAnaney, Curliss, & Abeyta-Price, 1993) we have begun developing an understanding of many aspects of stalking from a variety of perspectives: public (Duff & Scott, 2013; Scott, Duff, Sheridan & Rajakaruna, 2018), professional (Scott, Nixon, & Sheridan, 2013), victim (Kraaij et al., 2007), and perpetrator (Mohandie et al., 2006). Whilst there is no strict legal definition of 'stalking', section 2A and 4A of the Protection from Harassment Act (PHA) 1997 suggests that stalking could include a persistent, wilful and malicious course of conduct that would cause a reasonable person fear; such conduct could include phone calls, emails, following the victim and forcing contact with the victim, including online contact ("Stalking and Harassment | The Crown Prosecution Service", 2018). For the purpose of this thesis, stalking will be defined as a persistent course of unwanted conduct directed at a specific person and involving repeated (two or more occasions) visual or physical proximity, unwanted communication, or verbal, written, or implied threats, that could cause a reasonable person fear.

Cyberstalking. With advances in technology there are now also new avenues for stalking that have emerged, such as cyberstalking (Clarke, 2004; Maple, Short & Brown, 2011). For the purpose of this thesis, cyberstalking is defined as a persistent, repeated, unwanted course of conduct (i.e., communications, threats and/or harassment) directed towards another, through technology connected via the Internet, which may intrude upon another's life, and may cause fear and distress if the victim was to be aware of it (Nicastro, Cousins & Spitzberg, 2000; Reyns, Henson, & Fisher, 2011). Cyberstalking could also include instances of cyber obsessive relational intrusion (cyber-ORI), which is the persistent unwanted pursuit of intimacy via technology over the Internet.

Unfortunately, cyberstalking is not explicitly recognised within current stalking legislation, meaning much of this behaviour may be going unnoticed. This could be because cyberstalking's nature makes it more difficult to assess perpetrator intentions and victim consequences, which are required by anti-stalking legislation (Dennison & Thomson, 2005). Goodno (2007) suggested that the nature of cyberstalking is distinct from offline stalking due to differences in proximity and anonymity, as well as perpetrators being able to more easily impersonate the victim and enlist third parties to also harass and stalk the victim online. As a result, the legislation dealing with offline stalking may be inadequate to address cyberstalking. However, a common academic point of view is that stalking and cyberstalking have many shared characteristics and tend to occur in conjunction (Ogilvie, 2000; Cavezza & McEwan, 2014; Barnes & Biros, 2007; Maple et al., 2011). Thus, risk factors that have been identified for stalking perpetration might also apply to cyberstalking. It is therefore important that research further determines factors that cause certain individuals to be at risk of perpetrating cyberstalking, in order to then develop legislation and inform prevention and intervention measures.

Intimate partner cyber/stalking. It is widely accepted that stalking most often occurs within the context of an ex-intimate relationship (Farnham, James, & Cantrell, 2000; Dietz, 2003; Morewitz, 2003; Cupach & Spitzberg, 2004; Spitzberg & Cupach, 2007), yet there are relatively few theoretical frameworks for understanding the sub-clinical experiences of unwanted pursuit and stalking. Relational goal pursuit theory (RGPT; Spitzberg, Cupach, Hannawa, & Crowley, 2008) offers insight into this phenomenon. RGPT posits that for some, relationships are seen as goals and therefore those who are persistently pursuing a relationship have exaggerated the importance of this to themselves. Because

these individuals place such value on the goal of a relationship, when the pursuer cannot achieve the goal (e.g., the relationship), he or she may then ruminate, experience strong negative affect or obsess over the targeted person. In this context it is likely people might engage in obsessive relational intrusion (ORI; Cupach & Spitzberg, 2004) and eventually stalking. This was illustrated in a recent newspaper article of a woman who obsessively stalked her ex-partner after he terminated their relationship ("Stalker jailed after claiming man had to see her due to love contract", 2018). It is also probable that stalking is used by some as a means of decreasing distress stemming from uncertainty or termination of a relationship (Tong, 2013). Although RGPT has previously only been applied in offline stalking settings (e.g., Cupach, Spitzberg, Younghans & Tellitocci, 2011), it is possible it also has utility for cyberstalking (Cole, 2014).

Evolutionary theory also draws our attention to aspects of relational pursuit (i.e., mating effort) when thinking about why people might stalk. This theory suggests that it is the competition that arises from attracting a sexual partner that can be a powerful driver for risky and potentially antisocial behaviour (Charles & Egan, 2005; Duntley & Buss, 2010). This is more likely for men as the most reproductively successful males are often those who are risky in their strategies to acquire and retain mates (e.g., aggressive and persistent; Buss, 2003; Duntley & Shackelford, 2008). For example, men have been found to be more likely to conceptualise stalking behaviours as appropriate romantic and reproductive strategies (McKeon, McEwan, & Luebbbers, 2015). Sexual precedence has also been reported to produce a sense of entitlement in many perpetrators that contributes to sexual aggression and behaviours such as stalking (Livingston, Buddie, Testa, & VanZile-Tamsen, 2004). However, given the high prevalence of stalking behaviours among romantic partners and acquaintances, stalking must

be socially or culturally reinforced as appropriate, or at least expected, in the context of courtship behaviour (Duntley & Buss, 2012).

Online platforms. Specific online platforms of interest within this thesis are Tinder and Facebook. This is because Facebook was the number one SNS according to global social media ranking data ("Global social media ranking 2019 | Statistic", 2019) and, in regard to ranking specifically for online dating applications, Tinder was ranked either the first or second most popular in 2018 ("Tinder Revenue and Usage Statistics -2018", 2019).

Tinder is a geo-located smartphone dating application, which globally has 10 million daily users. Tinder appears to be different from many traditional online dating platforms (Whitty, 2008; Whitty & Young, 2016) in terms of precise location function that promotes immediate dating. Furthermore, in contrast to traditional online platforms (e.g., Match.com), which were optimised to computers, this smartphone application has the advantages of portability and continual availability (Marcus, 2016; Schrock, 2015). As a result, it requires little effort for selecting potential partners, with high availability and affordability.

Facebook is an expansive Social Networking Site (SNS) which had more than 1.37 billion daily active users on average for September 2017 ("Facebook newsroom", 2018). Aside from social networking, Facebook has become an indirect platform for romantic pursuit (Lampe et al., 2012; Tokunaga, 2011) through which many utilise Facebook to check up on friends or ex-partners lives.

Stalking attitudes. Another way of advancing understanding of sub-clinical experiences of unwanted pursuit and stalking lies in the knowledge structures that represent stalking, including beliefs and attitudes (Sheridan, Davies, & Boon, 2001; Cooper & McEwan, 2017). This is because people largely behave in accordance with their attitudes (Sheridan & Davies, 2000; Sheridan,

Davies & Boon, 2001; Bandura, 2002) or they rationalize their behaviour post-hoc, as is the case for sexual offenders (Marshall, Marshall & Kingston, 2011). As a result, stalking attitudes could act as a gateway to understanding stalking behaviours. Stalking attitudes include beliefs that: stalking is relatively harmless and somewhat flattering to the victim; stalking is a nuisance; stalking is romantic; and victims are to blame (McKeon, McEwan, & Luebbers, 2015). This thesis will assess stalking attitudes using the stalking related attitudes questionnaire (SRAQ; McKeon, 2010) in order to develop insight into the phenomenon.

Attitudes about stalking are largely impacted by individual differences and experiences (Yanowitz, 2006). This thesis is specifically interested in individual differences related to one's relationship history, such as: mating effort, motivations for using the dating application Tinder and behaviour towards (ex)partners on Facebook. By investigating the aforementioned variables this thesis will attempt to discern whether RGPT has utility in an online context. In addition, the thesis is interested in personality variables and their possible impact on stalking attitudes. This is because previous research has identified that personality traits, including those captured within the Dark Triad (i.e., machiavellianism, psychopathy and narcissism; Pauls & Williams, 2002) are associated with stalking behaviours (Menard & Pincus, 2014; Sheridan & Boon, 2002; Storey, Hart, Meloy, & Reavis, 2009).

Justification of the thesis

This aim of this thesis is to explore individual differences in stalking attitudes and associated online behaviour. Beginning by systematically reviewing the literature on perpetrator characteristics of cyberstalkers, it then examines a number of identified variables (with a particular interest in dark personality traits and mating effort), to discern whether these could predict stalking attitudes. Next,

the thesis examines individuals' explanations of individuals behaviour on Tinder and Facebook to discern any association with stalking attitudes. Finally, the thesis critiques the stalking related attitudes questionnaire, which is used throughout. It is hoped that the discoveries made in the thesis will form practice and research recommendations, developing our understanding of stalking and cyberstalking, creating greater awareness to inform legislation, prevention and intervention efforts.

Thesis structure

Chapter 2 provides a systematic review of the literature concerning cyberstalking perpetrator characteristics. This is the first systematic review on the topic. Due to there being no consistent metric for stalking perpetration, it is not possible to synthesise the literature with a meta-analysis. Therefore, the review will be a narrative synthesis.

Chapter 3 details an exploratory study examining public stalking attitudes as a gateway to better understand stalking perpetration. This research aims to develop a personal understanding of individual stalking attitudes in order to conceptualise why people might endorse stalking attitudes, and the characteristics of people who endorse stalking attitudes. Individual differences of interest are mating effort, Dark Triad traits, behaviours on Facebook and motivations to use Tinder.

Chapter 4 builds upon the findings of Chapter 3. This research examines individuals' explanations for using Tinder and Facebook for stalking related purposes. The reason for analysing language is because it is a fundamental tool which people use to express their attitudes; it provides insight into traditions, emotional experience, cultural norms and social customs that, in turn, make a significant contribution to the way people behave. This chapter employs a mixed

methods approach to analysing the data, first utilising the Linguistic Inquiry and Word Count 2015 software (LIWC2015; Pennebaker et al., 2015) and then performing a thematic analysis on the data.

Chapter 5 is a critique of the stalking related attitudes questionnaire (SRAQ; McKeon, 2010), which is used in Chapter 3 and 4. To date, the only alternative to the SRAQ is the stalking myths scale (SMS, Sinclair, 2006; 2012). The SRAQ is a self-report survey comprising Likert-type response scales. The purpose of the SRAQ is to measure attitudes linked to stalking by calculating individuals' alignment with stalking myths and stereotypes. A robust measure of stalking attitudes is necessary, as stalking literature has emphasized the importance of studying perceptions and attitudes, because people often behave accordingly (Sheridan & Davies, 2000; Sheridan, Davies & Boon, 2001).

This thesis' systematic literature review identifies important cyberstalker characteristics. These include adverse childhood experiences; variables including rational and individual ones (e.g., substance misuse and self-esteem); emotion regulation; gender differences; deviant online behaviour and problematic personality traits. Notably, four studies specifically investigated cyberstalking on Facebook (Furbee, 2015; Cole, 2014; Chalk & Jones, 2011; Lyndon et al., 2011), and all found conclusively that Facebook facilitates cyberstalking. Additionally, studies investigating personality concluded that aspects of narcissism significantly impact cyberstalking.

Provided in this thesis is also a predictive model of pro-stalking attitudes which included: being male; lower metrics across openness, age, mating effort, honesty-humility and venting on Facebook; and higher metrics across psychopathy, narcissism, using Tinder for seeking love and using Facebook for covert provocation. This confirmed stalking perpetration's well-established gender

bias, while also complimenting some systematic review findings that indicated relational variables, deviant online behaviour (e.g., Facebook behaviour) and problematic personality traits are characteristic of individuals with pro-stalking attitudes. Thus, to a degree, stalking and cyberstalking share perpetrator characteristics. Overall, the findings have important implications for professionals identifying dispositional risk of stalking and cyberstalking perpetration. The thesis findings also provide some basis for the utility of RGPT for cyberstalking.

CHAPTER 2

Systematic Review

A systematic review of the risk factors for cyberstalking perpetration

Abstract

Background. Cyberstalking is a new phenomenon in the academic and legislative field, so the literature regarding its nature is limited. A common academic point of view is that stalking, and cyberstalking have many shared characteristics and occur in conjunction. As such, many risk factors identified for stalking perpetration might therefore apply to cyberstalking. This chapter systematically reviewed the literature that concerned cyberstalking perpetration to further our understanding of the behaviour.

Data sources. Systematic searches were conducted within the PsycINFO, EMBASE, Medline, Web of Science and ProQuest databases using various terminological derivations of cyberstalking. A search of relevant references was conducted and experts in the field were contacted.

Study selection. In total, 11,379 potential studies were found. After obviously irrelevant articles and duplicates were removed, 420 studies were screened by title and abstract of which 49 studies were quality assessed and 14 included in the qualitative data synthesis.

Data synthesis. The results indicated the key themes of risk associated with cyberstalking perpetration were: adverse childhood experiences; personality; relational issues; emotion regulation; online behaviour (e.g., deviant Facebook use); and gender. The specific independent variables encapsulated within the themes varied between studies.

Limitations. Most included studies had methodological weaknesses, for example, the use of self-report measures, generalisability of samples, and inconsistent measurement of cyberstalking.

Conclusions. Overall, the review found the most commonly reported risk factors for cyberstalking perpetration were: attachment style, personality, gender and relational issues. Suggestions were made for future research, social network site safety features, and for assessment and intervention of potential perpetrators.

Keywords. *Cyberstalking, Stalking, Risk factors, Obsessive relational intrusion, prevention.*

Background

Technological advancements in social media have increased access to interpersonal contact. Unfortunately, corresponding avenues for criminal opportunities in this area have snowballed, creating new areas of criminality including cyberstalking (Clarke, 2004; Maple, Short & Brown, 2011). Cyberstalking is a novel phenomenon with nascent literature, legislative research and language. A common academic point of view is that stalking and cyberstalking have many shared characteristics and tend to occur in conjunction (Ogilvie, 2000; Cavezza & McEwan, 2014; Barnes & Biros, 2007; Maple et al., 2011). Thus, risk factors that have been identified for stalking perpetration might also apply to cyberstalking. For the purpose of this review, Cyberstalking has been defined as a persistent, repeated, unwanted course of conduct (i.e., communications, threats and/or harassment) directed towards another, through technology connected via the Internet, which may intrude upon another's life, and may cause fear and distress if the victim were to be aware of it (Nicastro, Cousins & Spitzberg, 2000; Reynolds, Henson & Fisher, 2011).

Cyberstalking perpetration can also include instances of cyber obsessive relational intrusion (cyber ORI), which is the persistent unwanted pursuit of intimacy via technology connected to the Internet. Cyber-ORI does not have to be threatening, it could simply be annoying or pestering an object of affection, which is inappropriate in terms of timing and behaviour (Spitzberg, Marshall & Cupach, 2001). For example, it might include exaggerated messages of affection, excessive tokens of affection, hacking a partner's social networking account, or exposing private information about a partner. Research indicates that most stalking cases of ex-partner is a form of, or includes obsessive relational intrusion (ORI), and that when the operationalization of stalking is expanded to include ORI, there are

much larger samples of men and women who have been “stalked” (Spitzberg et al., 2001). Thus, the current review will include research investigating this.

Surveillance of others online is a seemingly harmless behaviour, for example, the colloquial term “Facebook stalking” (many Facebook users browse the profiles of friends who also participate on the site; Marshall, 2012). However, the veil of anonymity offered by the Internet has caused a concerning trend of cyberstalking, whereby individuals who may not otherwise engage in offline stalking, are utilising cyberstalking (Cross, 2014; Shipley & Bowker, 2014; DeTardo-Bora & Bora, 2016). Although only a small portion of Internet users engage in cyberstalking, it is important we understand the factors which cause certain individuals to be at risk of perpetrating it. Increased awareness of the behaviour will improve attempts at reducing it and will inform interventions for potential perpetrators.

Risk factors. While many stalkers do not suffer from a mental illness, they are not uncommon among stalkers who come into contact with the criminal justice system (McEwan, Mullen & MacKenzie, 2009; Mohandie, Meloy, Green McGowan & Williams, 2006; Rosenfeld, 2004). Meloy and colleagues (2000) found that stalking perpetrators are likely to be males who have prior criminal offenses or Axis I mental disorders, such as drug or alcohol history, mood disorders, schizophrenia, or personality disorder diagnoses. Since then, others have attempted to generalise these profiles to cyberstalking perpetrators (e.g., Cavezza & McEwan, 2014). However, research has also evidenced distinct differences between stalking and cyberstalking (e.g., Bocij & McFarlane, 2002). For example, cyberstalking provides a better opportunity for anonymous and impulsive behaviour, as well as affording individuals increased access to victims (Pittaro,

2007). As such, the risk profiles might not be generalisable, and therefore, improved understanding of the cyberstalker profile is required.

Other factors potentially associated with a risk of cyberstalking include: rejection sensitivity (Downey & Feldman, 1996; Sinclair, Ladny & Lyndon, 2011); self-regulation (Davis, Swan & Gambone, 2010); self-control (Marcum, Higgings & Nicholson, 2016); and self-esteem (Steinfelds, Ellison & Lampe, 2008). Relational Goal Pursuit Theory (RGPT; Spitzberg, Cupach, Hannawa, & Crowley, 2008) suggests poor self-regulation is a precursor for inappropriate pursuit behaviours, because certain individuals potentially use their relationships to regulate positive self-views (Buffardi & Campbell, 2008). It is possible that this could also cause some individuals to cyberstalk romantic partners, as a means of decreasing distress stemming from uncertainty or termination of a relationship (Tong, 2013). The theory also posits that jealousy, possessiveness, insecure attachments, and intense attraction are risk factors for engaging in ORI (Cupach & Spitzberg 2004); these characteristics have also been found to significantly predict cyberstalking (Strawhun, Adams, & Huss, 2013).

Behavioural risk factors for cyberstalking perpetration include offline-stalking perpetration (Spitzberg & Hoobler, 2002; Sheridan & Grant, 2007) and having a prior criminal history (Hutton & Haantz 2003). We might also assume that deviant online behaviours (such as, hacking and cyberbullying etc.) are risk factors for cyberstalking. This is because these risk factors may be associated with deviant attitudes and beliefs, such as, endorsing stalking stereotypes (Sinclair, 2012; Dunlap, Lynch, Jewell, Wasarhaley & Golding, 2010) and anti-social attitudes (Andrews & Bonta, 2014).

Advancement in stalking awareness. Through developing our understanding of offline stalking risk factors, awareness campaigns have become more educational and effective, and legislation has advanced (Radosevich, 2000). For example, in the United Kingdom, The Protection of Freedoms Act (2012) recognised Stalking as a specific crime separate from Harassment by the insertion of sections relating to stalking: s2A(1) "Stalking", s4A(1)(b)(i) "Stalking involving fear of violence", and s4A(b)(ii) "Stalking involving serious alarm or distress". Cyberstalking is not explicitly recognised within current stalking legislation, meaning much of this behaviour could be going unnoticed. Although there is an association between offline stalking and cyberstalking, Goodno (2007) suggested the nature of cyberstalking is distinctly different from offline stalking due to the elements of proximity and anonymity being inherent in the nature of cyberstalking. As such, the legislation dealing with offline stalking may be inadequate to address cyberstalking. A better understanding of risk factors of cyberstalking will, therefore, improve our understanding while contributing to more effective legislation and the future safety and support of victims and potential victims.

A scoping search was conducted to identify previous systematic reviews and meta-analyses on the topic; this revealed that no such works have been completed (Appendix A). This review will add to current knowledge, as the question has not previously been addressed.

Objectives

This review seeks to establish through the available literature a greater understanding of cyberstalking perpetrator characteristics in order to make attempts at increasing awareness of the behaviour, contributing to reduction and

informing interventions for potential perpetrators. The specific review question is: What are the risk factors associated with cyberstalking perpetration?

Methodology

Information sources. This study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA; Moher, Liberati, Tetzlaff, Altman, & Prisma Group, 2009). Systematic database searches were conducted on PsycINFO (1967 to 23.10.17), EMBASE (1974 to 23.10.17), Pub Med (30.10.17), Cochrane Library (24.10.17), Campbell Library (24.10.17), National Criminal Justice Reference Service, and the Home Office and Ministry of Justice websites (30.10.17), MEDLINE (1946 to 23.10.17), Web of Science (1900-2017), and ProQuest (1978-2017) to identify studies that met the eligibility criteria detailed below.

Search strategy. The search strategy combined all possible variations of search terms relating to "cyberstalking" (e.g., [online stalking OR cyber stalking OR cyberstalking OR Facebook stalking OR (Internet AND Stalking) OR obsessive relational intrusion]). The search strategy did not include variations of "risk factors" or "perpetrator" due to initial scoping finding that this yielded exponential irrelevant articles. Search areas included subject headings, title, abstract, keywords, and topic. Bibliographies of included literature were hand searched to identify relevant journals. Three key authors were contacted and two responded. One provided an unpublished paper relating to an update of the SRAQ and one signposted to the University of Bedfordshire Cyberstalking Research Centre for information on the most current research they were conducting.

Eligibility criteria. Studies that met the following criteria were included in the review (see Appendix B for inclusion/exclusion form): (a) studies that involved human subjects of any age over 16 years, who used the Internet, (b)

study designs such as, observational studies, case-control studies, longitudinal studies and cross-sectional studies; qualitative studies and single case studies (with no control group) were excluded from the review, (c) all studies that explored cyberstalking, including those which looked at perpetrators and also risk and/or protective factors, and (d) studies that were written in English with no date restrictions. Studies that conceptualised cyberstalking within the construct of online harassment, or that investigated cyberstalking from a victim perspective were excluded. Studies that utilised the same data were included as one study.

Study selection. References were extracted from searched databases and stored within reference management software (myendnote.com). Duplicate articles were removed before the remaining studies were screened by title and abstract. Studies were excluded at the title and abstract stage if reference was not made to keywords (e.g., variations of cyberstalking). The remaining articles were quality assessed using a quality assessment checklist based on the Critical Appraisal Skills Programme (CASP; 2014; Appendix F), which was piloted before use. Data were then extracted from the outstanding articles using a tool based on the Cochrane Handbook (Appendix D), which was also piloted before use.

Results

A total of 11,369 articles were identified via the initial search, and a further 10 studies found through hand searching the reference lists of relevant articles. Duplicate studies and articles unrelated to the topic were removed (n= 10,959), which resulted in 420 studies being screened using the inclusion/exclusion criteria. After screening, 49 studies remained for quality assessment (Figure 1).

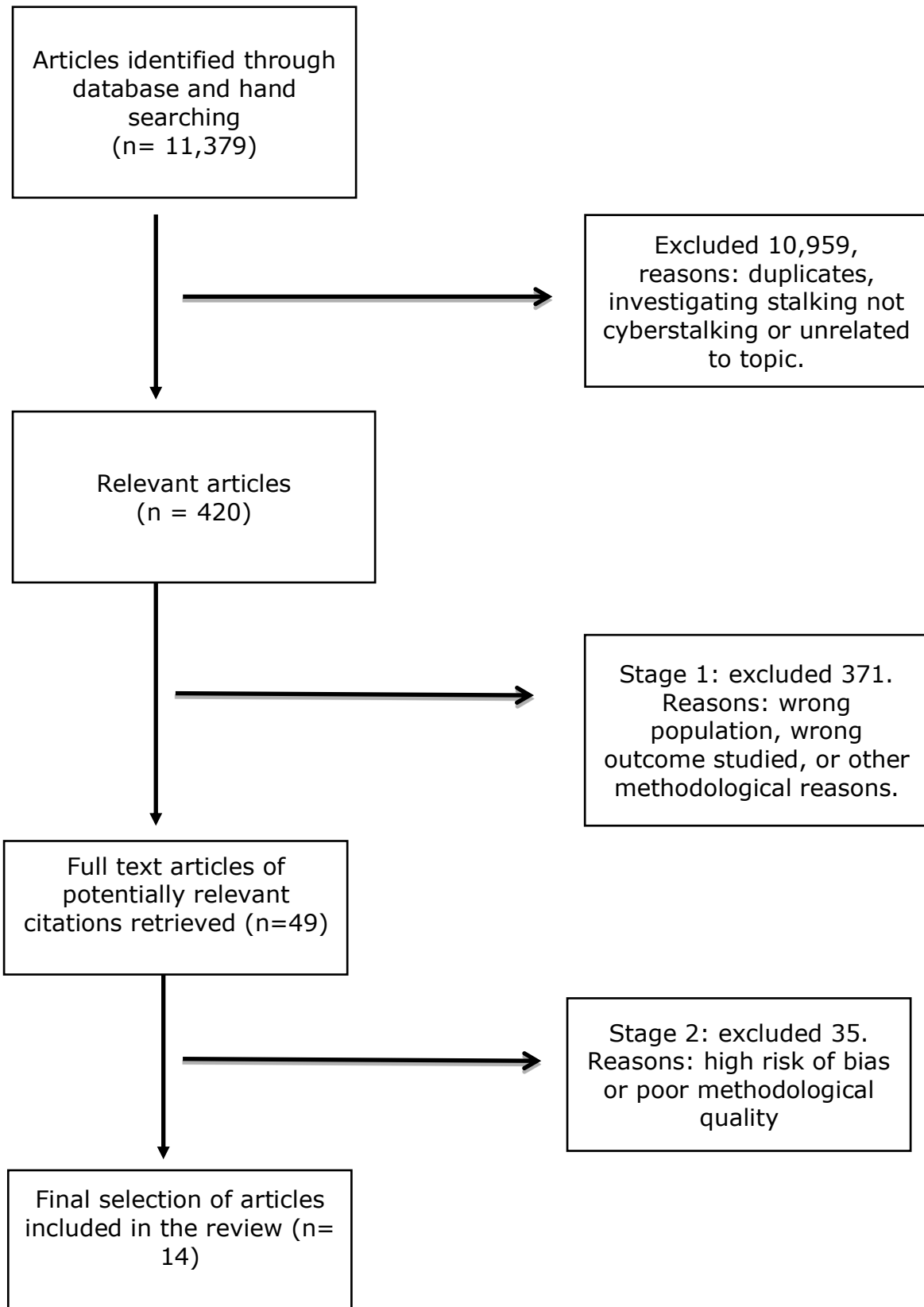


Figure 1. PRISMA Flowchart for the selection of eligible studies.

Quality assessment. Using the CASP, studies were evaluated for methodological quality and risk of bias. The author assessed each study before a second reviewer independently evaluated 10 randomly selected studies for concordance. The second reviewer was an academic colleague trained in conducting a systematic review and with a research background related to the review topic. Inter-rater reliability was absolute ($\kappa = 1$). Fourteen studies were deemed appropriate for review, and data extraction was completed (see Table 1). Dardis and Gidycz (2016; 2017) made use of the same dataset and were included as one study.

Study characteristics. The characteristics of included studies are reported in Table 1 and are presented in order of highest to lowest quality. Overall there were 9,158 participants recruited across the 14 studies. Of the participants, 5,964 (65%) were female. Of this total population, 3,686 (40.5%) reported engaging in cyberstalking perpetration (note that 5 articles did not provide specific data regarding this). Participants' relationship status was not always reported (e.g., because it was not of relevance to the study) nor was measured consistently, so cannot be commented on. Most samples were opportunistic studies of university students, apart from one that recruited patients admitted to a stalking clinic in Australia (Cavezza & McEwan, 2014); no studies reported a sample power calculation, but all included studies had a sample of over 200 participants. Studies that recruited student samples were not deemed methodologically poor, as students and those who are under 30 years old are reportedly most likely to have access to the Internet and thus have the means to engage in cyberstalking (Langhinrichsen-Rohlin, Palarea & Cohen, 2000; Davis, Ace & Andra, 2000). Studies were not confined to those conducted within the

United Kingdom: 71.1% were from the USA, 7.3% from Greece, 7.3% from Canada and 14.3% from Australia.

Of the included studies, three were doctorate theses (Furbee, 2015; Cole, 2014; & Dardis, 2015) and the remaining 11 were published in peer-review journals. The study designs of the included studies were generally consistent: 13 were cross-sectional studies using online questionnaires, and one was a case-control design. Although cross-sectional study designs can be described as low quality due to the exposure and outcome being simultaneously assessed (meaning the results are unable to determine cause and effect), for the purposes of the current investigation, the cross-sectional study design was appropriate.

The definition of cyberstalking and related measurements was not consistent across studies, which raises the issue with generalisability of the findings. This is likely due to the lack of a definitive anti-stalking law (Shewidan, Blaauw & Davies, 2003; "Stalking and Harassment | The Crown Prosecution Service", 2018) and also reflective of the developing nature of the literature in the area, as well as the time period and country the research was published in.

Operationalising of the construct included: Facebook ORI items (modified from: Spitzberg et al., 2008; and Cupach, Spitzberg, Younghans & Tellitocci, 2011), ORI scale (Spitzberg & Cupach, 2008), Controlling Partners Inventory-Self (CPI-S; Burke, Wallen, Vail-Smith & Knox, 2011), Interpersonal Electronic Surveillance Scale (Tokunaga, 2011), Electronic Use Pursuit Behavioural Index (EUPBI; Strawhun et al., 2013), Cyber Obsessional Pursuit (COP; Lyndon et al., 2011) and vignette based cyberstalking scenarios and questions (Kalaitzaki, 2017). All dependent and independent variables were subject to reliability and validity testing and reported good outcomes in accordance with Ponterotto and Ruckdeschel's (2007) reliability matrix and the Standards for Educational and

Psychological Testing (AERA, APA, NCME, 1999). One study was a case-control design which assessed case files of patients admitted to a stalking clinic (Cavezza & McEwan, 2014), however, all other studies utilised self-report, which is potentially prone to measurement bias (Van de Mortel, 2008).

Table 1. Summary of included studies

Study	Study design	Sample size	Sample demographic	Mean age in years (<i>SD</i>)	Gender (% of female)	Cyberstalking measures	Relationships status	Statistical analysis	General study focus
1. Cavezza & McEwan (2014)	Case-control	271 14% (36) cyber stalkers	<ul style="list-style-type: none"> • Cyber stalking clinic • Australia 	36.7 years (<i>SD</i> = 11.0)	6% (<i>N</i> = 16)	Details about the nature of cyberstalking were recorded from clinical files	N/A	Non-parametric analysis	Investigated differences in demographic, clinical & behavioural characteristics of cyberstalking offenders
2. Lyndon, Bonds-Raacke, & Cratty (2011)	Cross-sectional	411 51% (209) cyber stalkers	<ul style="list-style-type: none"> • University students • USA 	19 years (<i>SD</i> = 1.18).	64% (<i>N</i> = 263)	Cyber obsessive pursuit scale, Facebook survey and ORI measure	Those who had been in a serious relationship	Principle component analysis Chi-square	Examined whether individuals obsessively monitor or harass their ex-partners on Facebook & whether they engage in COP & ORI
3. Strawhun, Adams & Huss (2013)	Cross-sectional	248 26.5% (66) cyber stalkers	<ul style="list-style-type: none"> • University students – psychology • USA 	19.18 (<i>SD</i> = 2.7)	64.1% (<i>N</i> = 158)	Electronic Use Pursuit Behavioural Index Controlling partners inventory	N/A	Regression analysis	Examined the prevalence and correlates of cyberstalking behaviours
4. Menard & Piscus (2012)	Cross-sectional	1,741 1692	<ul style="list-style-type: none"> • University students • USA 	19.3 years (<i>SD</i> = 1.60)	54% (<i>N</i> = 934)	ORI measure – online & offline stalking	Did not specify	T-tests Zero-order correlations	Investigated the influence of early childhood maltreatment,

		(97.5%) cyber stalkers						Hierarchical regression analyses	attachment styles, alcohol expectancies, & narcissistic personality traits on ORI online & offline.
5. Chalk & Jones (2011)	Cross sectional	230 57% (132) cyber stalkers	<ul style="list-style-type: none"> University students – business faculty Canada 	73% were 20 to 24 years	59% (N = 135)	38 Facebook ORI behaviours, rated on a Likert-type scale	Did not specify	Frequency analysis Z-test Exploratory factor analysis	Examined Facebook as facilitator of Cyber ORI
6. Cole (2014)	Cross sectional	326 Didn't state cyber stalkers	<ul style="list-style-type: none"> University students USA 	20.79 years, (SD = 2.69).	55% (N = 179)	Facebook ORI items, and measures for dependent variables.	Participants had a romantic relationship (1 year +) that ended	One-way ANOVA Multiple regression analyses	Examined ORI on Facebook.
7. Dardis (2015)	Cross-sectional	1156 48.5% (561) cyber stalkers	<ul style="list-style-type: none"> University students – psychology USA 	18+	66.7% (N = 771)	Controlling partners inventory	Participants were in a relationship that ended in the past 3 years	Linear regression Structural equation modelling	Assessed theories of cyber unwanted pursuit such as, relational goal pursuit, investment model & coercive control theories
8. Dardis & Gidycz (2017)	Cross-sectional	1167 11% M&F severe, & 34% of M & 48% of F minor	<ul style="list-style-type: none"> University students – psychology USA 	18 +	67% (N = 779)	Controlling partners inventory	Experienced a break-up within the past three months	T-tests Correlation analysis	Assessed an integrated model of in-person & cyber UPB perpetration

									cyber stalking
9. Fox & Tokunaga (2015)	Cross-sectional	431 Didn't state cyber stalkers	<ul style="list-style-type: none"> University students USA 	20.34 years, (<i>SD</i> = 2.28)	65% (<i>N</i> = 280)	Interpersonal electronic surveillance scale.	Experienced a breakup in the past year	Factor analysis Chi-square tests	Tested a model of attachment, investment, & post-dissolution emotional distress as predictors of surveillance of an ex-partner on Facebook
10. Furbee (2015)	Cross-sectional	209 Didn't state cyber stalkers	<ul style="list-style-type: none"> University students USA 	19.9 years (<i>SD</i> = .05)	57.4% (<i>N</i> = 166)	Facebook stalking questionnaire items modified from Cupach & Spitzberg (2011)	All had a romantic relationship that ended at some point in the past.	Stepwise multiple regression Correlation	Aimed to identify predictable personality traits that influenced one's likelihood to stalk an ex-partner on Facebook.
11. Burke, Wallen, Vail-Smith & Knox (2011)	Cross-sectional	804 Didn't state cyber stalkers (approx 50% +)	<ul style="list-style-type: none"> University students USA 	Ages ranged from 18 -23 (<i>M</i> = 19.12) years	67.1% (<i>N</i> = 500)	Controlling partners inventory	Did not specify	T-tests ANOVA Chi-squared tests Reliability testing for CPI	Examined the extent to which people used communication technology (e.g., cell phone, email, social network sites) to monitor or control partners in intimate relationships.
12. Kalaitzaki (2017)	Cross-sectional	442 8.2% (36) cyber stalkers	<ul style="list-style-type: none"> University students Greece 	44.12% were 22-27 years	78.7% (<i>N</i> = 347)	Defined cyberstalking then asked questions on cyberstalking and stalking.	N/A	Binary logistic regression One-way ANOVA.	Investigated the prevalence, personality, attachment style, & relating to others of both victims & perpetrators.

13. Reyns, Henson & Fisher (2012)	Cross-sectional	789 39 (4.9%) cyber stalkers	<ul style="list-style-type: none"> University students USA 	20.18 years	61% (N = 481)	Defined cyberstalking and asked questions related to it	N/A	Bivariate and multivariate analyses	Investigated cyberstalking victimisation & offending
14. Smoker & March (2017)	Cross-sectional Online survey	689 Didn't report cyber stalkers	<ul style="list-style-type: none"> General population Australia 	26 years (SD = 10.61)	70% (N = 482)	Intimate partner cyberstalking scale	Did not specify	Hierarchical multiple regression	Aimed to predict perpetration of intimate partner cyberstalking using gender and Dark Tetrad personality traits

Narrative Data Synthesis

Measures of cyberstalking were inconsistent across the articles reviewed, as were the specific areas of investigation. As a result, synthesis by meta-analysis was not possible and a narrative synthesis was deemed most appropriate. In keeping with the aim of this review, which was to uncover the variables that might have relevance to preventative and intervention measures, the structure of the results section will first present variables that are of most importance to the aim and which are mentioned most frequently among the reviewed articles; then it will detail other variables of interest.

Fourteen studies were included in the narrative data synthesis. All reported significant associations with at least one independent variable and cyberstalking perpetration. Wide ranges of independent variables were measured across the studies, and therefore the current synthesis will group these variables into related themes to discuss. See Table 2 for an overview of the study results. Studies are presented in the order of highest to lowest quality.

Table 2. Overview of study results: perpetrator risk and protective factors, and similarities to offline stalking.

Study	Risk factors	Protective factors	Similarities to offline stalking
1. Cavezza & McEwan (2014)	<ul style="list-style-type: none"> • Ex-intimate partners • Motivation to resume a relationship or to exact revenge for its breakdown • Personality disorder or marked problematic personality traits • Mood disorder 	N/A	Both are likely to have personality disorders. 61% (<i>N</i> = 22) cyberstalkers and 53% (<i>N</i> = 19) offline stalkers were diagnosed with a personality disorder
2. Lyndon, Bonds-Raacke & Cratty (2011)	<ul style="list-style-type: none"> • Using Facebook to monitor or harass an ex-partner • Covert provocation, public harassment and venting on Facebook 	N/A	Participants who engaged in COP (cyberstalking) were almost six times more likely to perpetrate ORI (offline stalking)
3. Strawhun, Adams & Huss (2013)	<ul style="list-style-type: none"> • Prior attachment, jealousy and domestic violence within relationships • Being female • Interpersonal physical and psychological violence. • Jealousy • For men, attachment styles were unhealthy or underdeveloped, specifically a fearful attachment • For men, physical aggression • For females, anger 	Secure attachment style	Cyberstalking behaviours were related to traditional stalking behaviours. However, women were more likely to perpetrate cyberstalking than men
4. Menard & Piscus (2012)	<ul style="list-style-type: none"> • Being female <p>Predictor variables that showed a significant ($p < 0.001$) relationship with cyberstalking for both men and women:</p> <ul style="list-style-type: none"> • Need for approval (not sig for women) • Narcissistic vulnerability • Insecure attachment (not sig for men) • Preoccupied attachment • Childhood sexual abuse 	N/A	Risk factors for stalking and cyberstalking were the same e.g., Childhood sexual abuse predicted both forms of stalking for men and women

5. Chalk & Jones (2011)	<ul style="list-style-type: none"> • Alcohol expectancy (not sig for men) • Being close friends • Using Facebook 	N/A	N/A
6. Cole (2014)	<ul style="list-style-type: none"> • Being female • The results indicated that there were two types of Facebook ORI behaviours: explicit and covert <ul style="list-style-type: none"> ○ Explicit ORI was predicted by: self-efficacy among those whose partner ended the relationship; goal linking when the breakup was self-initiated; negative emotion and positive emotion; anger and love ○ Covert ORI was predicted by: rumination across all levels of breakup initiator (self, partner, or mutual); negative emotions; love and anger • Being broken up with 	N/A	N/A
7. Dardis (2015)	<ul style="list-style-type: none"> • Anxious attachment • Emotion regulation difficulties • Difficulty with self-control • Alcohol and substance misuse • Possessiveness during a relationship • Psychological & physical DV perpetration 	N/A	Women engaged in more cyber-UPB while men engaged in more in-person UPB
8. Dardis & Gidycz (2017)	<ul style="list-style-type: none"> • Women engaged in more minor cyber UPBs than men • Men were more likely to engage in severe cyber UPBs • Coercive control • Self-control difficulties were significantly correlated with minor cyber UPB's • Intimate Partner Violence perpetration during the relationship 	N/A	Women engaged in more cyber-UPB while men engaged in more in-person UPB
9. Fox & Tokunaga (2015)	<ul style="list-style-type: none"> • Anxious attachment predicted commitment to a relationship. Greater commitment to the relationship 	N/A	N/A

	made the breakup more distressing. The distress stemming from the breakup precipitated subsequent online surveillance		
	<ul style="list-style-type: none"> Monitoring an ex-partner online immediately following the dissolution of the relationship Being broken up with 		
10. Furbee (2015)	<ul style="list-style-type: none"> Grandiose narcissism Self-efficacy 	Self-esteem	N/A
11. Burke, Wallen, Vail-Smith & Knox (2011)	<ul style="list-style-type: none"> Being female Females were significantly more likely to monitor partner's behaviours by checking call and email histories and making excessive calls. Males were significantly more likely to monitor a partner's behaviour with the use of GPS monitoring 	N/A	N/A
12. Kalaitzaki (2017)	<ul style="list-style-type: none"> Increased clingy, intrusive, restrictive and possessive relating to others Need of attention and admiration Individuals with mothers who were rejecting and hostile Experiences of neglectful parenting 	Agreeableness	N/A
13. Reyns, Henson & Fisher (2012)	<ul style="list-style-type: none"> Being male The most frequent victim-offender relationship for almost every type of pursuit behaviour was stranger (44.1% of incidents) 	N/A	N/A
14. Smoker (2007)	<ul style="list-style-type: none"> Being female Machiavellianism, narcissism, psychopathy, and sadism 	N/A	N/A

Childhood Experiences. Strawhun and colleagues (2013), Menard and Piscus (2014), Dardis (2015), Fox and Tokunaga (2015) and Kalaitzaki (2017) reported that adverse early childhood experiences had a significant impact on individuals' likelihood to engage in cyberstalking perpetration. Experiences of neglectful parenting were associated with a higher likelihood of cyberstalking perpetration, such as among those who experienced maternal hostility and rejection (Kalaitzaki, 2017). In addition, childhood sexual abuse and physical abuse contributed to the likelihood of an individual to cyberstalk (Menard & Piscus, 2014).

Insecure attachments were associated with cyberstalking perpetration. These included: anxious attachment (Dardis, 2015; Fox & Tokunaga, 2015); insecure attachment for women and preoccupied attachment for men (Menard & Piscus, 2014); and also, fearful attachment for men (Strawhun et al., 2013). Strawhun and colleagues (2013) were the only researchers to report a protective element in regard to early experiences, finding that a secure attachment style had a significant negative relationship with cyberstalking perpetration. However, it is of note that Strawhun and colleagues (2013) had a low threshold definition of cyberstalking, which included cyberstalking-related behaviour that was perpetrated rarely but repeatedly.

Relational factors. Literature regarding traditional offline stalking has found that having a prior relationship with a stalking perpetrator is a significant risk factor for victimisation. Many of the articles included in the review have investigated relational factors associated with cyberstalking perpetration. The association between type of victim and offender relationship for cyberstalking perpetration seems to be less clear. For

example, ex-intimate cyberstalking was found by Cavezza and McEwan (2014) to be the most common and likely to escalate to violence. However, Chaulk and Jones (2011) found that close friends were more likely to engage in stalking-like behaviours than ex-intimates or acquaintances, while Reys and colleagues (2012) concluded that stranger cyberstalkers were the most common, although they also noted that in all cases it was more common that the victim and offender knew each other in some way. This possibly indicates that the stalking context is important in discerning risk, as for example, Facebook might be a high-risk context for stalking friends due to it affording one access to a vast number of online friends.

A number of included studies specifically investigated cyberstalking within the context of ex intimate relationship (Lyndon et al., 2011; Fox & Tokunaga, 2015; Dardis & Gidycz, 2017; Dardis, 2015; Furbee, 2016; Cole, 2014; Smoker, 2014; Burke et al., 2011). This is possibly due to previous research on offline stalking, which found that a relationship history was a significant risk factor for victimisation and perpetration. Within these studies, a number of relational risk factors were found to be predictive of cyberstalking perpetration. These included: possessiveness in the relationship (Dardis, 2015); psychological domestic violence; physical domestic violence (Dardis, 2015; Strawhun et al., 2013; Dardis & Gidycz, 2017); jealousy (for women; Strawhun et al., 2013); and rumination about a relationship (Dardis, 2015; Cole, 2014); as well as coercive control among men (Dardis & Gidycz, 2017).

The current review suggests risk of cyberstalking perpetration is associated with a combination of relational factors such as the nature of the relationship and the nature of the breakup. For example, those who were

broken up with engaged in significantly more cyberstalking related behaviours than those who ended the relationship themselves, or couples who mutually ended the relationship (Cole, 2014; Fox & Tokunaga, 2015; Cavezza & McEwan, 2014). Fox and Tokunaga (2015) also found that the style of insecure attachment interacted with relational factors. Specifically, they found that anxious attachment predicted greater investment and commitment to the relationship, which in turn made the breakup more distressing and impaired recovery, precipitating cyberstalking. However, studies in the review were inconsistent in the collated information for relational factors, making the association difficult to discern with certainty (e.g., Cole looked at levels of breakup initiator: self, partner, or mutual, while Fox & Tokunaga investigated the nature of the relationship, such as reports of domestic violence, as well as the breakup initiator).

Some studies also investigated non-intimate relationship variables. For example, Kalaitzaki (2017) looked at the way individuals relate to others. They found that people were significantly more likely to cyberstalk if they demonstrated patterns of being clingy, intrusive, restrictive and possessive when relating to others, or appeared to need attention and admiration.

Emotional functioning. Some of the studies investigated the link between emotional experiences and risk of cyberstalking perpetration. Cole (2014) investigated cyberstalking specifically on the social network platform "Facebook", whilst others did not constrain cyberstalking to this platform (Strawhun et al., 2013; Dardis, 2015; Dardis & Gidycz, 2017). Dardis (2015) and Dardis and Gidycz (2017) found that emotion regulation difficulties were associated with cyberstalking-related behaviours, and Cole

(2014) found that general negative emotions predicted explicit and covert Facebook ORI. Specifically, anger (Cole, 2014; Strawhun et al., 2013) was significantly associated with cyberstalking related behaviours; however, gender impacted on this association. Anger was not a significant predictor of cyberstalking perpetration for men (although physical aggression was), whereas it was for females (Strawhun et al., 2013). Unfortunately, Strawhun and colleagues did not ask participants if the targets of aggression were also the individuals they cyberstalked, so we cannot say with certainty whether there is a significant relationship between anger and cyberstalking.

Gender. The results suggest that participants' gender was important to consider when investigating cyberstalking behaviours. Five articles found that women admitted greater frequencies of cyberstalking perpetration than males (Menard & Piscus, 2014; Smoker & March 2017; Strawhun et al., 2013; Burke et al., 2011; Cole, 2014). Although, Reynolds and colleagues (2012) found that males were most likely to perpetrate cyberstalking, which is concordant with findings related to offline stalking perpetration. Possible reasons why there are gender differences in prevalence, reporting and techniques of stalking include: the goal of stalking (e.g., to attain intimacy or casual sex); uses of aggression (e.g., verbal, physical control, manipulation); perception of the dangerousness of techniques; and reporting of behaviours.

However, it is unclear whether women are more likely to cyber-stalk, or whether they demonstrate different techniques of cyberstalking than males. Burke and colleagues (2011) suggest that men and women have distinct and different methods of cyberstalking. This was supported by

findings from Dardis and Gidycz's (2017), for example, who reported that men were more likely than women to use methods such as hidden cameras, global positioning system (GPS), tracking social media check-ins and sending threatening emails, whilst women were more likely to report sending excessive numbers of texts and emails to their former partners.

Personality. Problematic personality traits or personality disorders appeared to be common among cyberstalking perpetrators (Cavezza & McEwan, 2014; Furbee, 2015; Menard & Piscus, 2014; and Smoker & March, 2017). Smoker and March (2017) identified that all Dark Tetrad traits were significant predictors of intimate partner cyberstalking. These included: machiavellianism, narcissism, psychopathy, and sadism. Furbee's (2015) results also found that grandiose narcissism had a positive association with "Facebook stalking" of an ex-partner, as well as general cyberstalking of others (Menard & Piscus, 2014). Kalaitzaki (2016) was the only article that found a protective relationship between personality and cyberstalking; specifically, that greater agreeableness decreased the risk of perpetration.

Personality traits associated with self-concept were also found to predict the likelihood of cyberstalking related behaviours. These included: low self-esteem (Furbee, 2015) and, for minor cyberstalking behaviours, self-control difficulties (Dardis & Gidycz, 2017). In addition, Furbee (2015) found that self-efficacy had a positive association with Facebook stalking of an ex-partner, suggesting it is those who have a positive view of their online skills that are most at risk of engaging in the behaviour. The dependent variable in these articles was varied: Furbee (2015) specifically investigated Facebook stalking of an ex-partner; Dardis and Gidycz (2017) differentiated

between minor and severe cyberstalking behaviours; and Dardis (2015) looked more generally at cyber unwanted pursuit behaviours.

Online behaviour. Individual behaviour online was only investigated by one article. Lyndon and colleagues (2011) found that using Facebook to monitor an ex-partner via covert provocation, public harassment and venting was significantly associated with further cyberstalking perpetration. Further, Lyndon and colleagues (2011) found that those who engage in cyberstalking related behaviours were more likely to also engage in obsessive relational intrusion (i.e., offline stalking), which indicates a relationship between offline and online stalking.

Similarities between offline and online stalking. Although not the primary focus of the review, the synthesis took note of research that mentioned similarities between offline and online stalking to discern whether there were shared risk factors. Few studies collated data on offline stalking in addition to cyberstalking (Menard & Piscus, 2014; Lyndon et al., 2011; Dardis & Gidycz, 2017; Cavezza & McEwan, 2014), and therefore, little can be said about the relationship between the two with certainty. Of the articles which investigated both, cyberstalking was reported to have similarities to stalking; for example, Cavezza and McEwan (2014) found problematic personality traits tend to be an overlapping risk factor; both Mullen (1999) and McEwan and colleagues (2007) have previously found that offline stalkers have personality disorders or problematic personality traits related to narcissism, which the current review confirmed for cyberstalkers. In similar vein, Furbee (2015) found that grandiose narcissism was positively related to Facebook stalking, so it can be inferred that both offline and online stalkers may have tendencies to narcissism.

However, the review indicated that cyberstalking tends to be perpetrated more by females, which is contrary to what we know about offline stalking perpetration.

Discussion

Fourteen studies provided evidence for a range of variables significantly associated with cyberstalking perpetration. These factors included adverse childhood experiences, relational factors, individual factors (such as substance misuse and self-esteem), emotion regulation, gender differences, deviant online behaviour and problematic personality traits. Most studies were cross-sectional, with only one case-control design. Across studies, the measurement for cyberstalking was inconsistent, limiting the power and generalisability of the overall findings. The definition of cyberstalking also varied across studies; some investigated cyberstalking behaviours broadly, while others looked at it specifically in regard to Facebook (Furbee, 2015; Cole, 2014; Chalk & Jones, 2011; Lyndon et al., 2011).

Those studies that specifically investigated Facebook found conclusively that it facilitated cyberstalking. However, much of what occurs on Facebook is anonymous and therefore data is reliant upon self-report, which is unreliable. Although this anonymity is also what makes Facebook a popular tool for cyberstalking, Facebook is falling out of favour with younger users and is being replaced by alternative SNSs such as Snapchat and Instagram ("Ampere Analysis - Social media video platforms driving viewing screen shift", 2017). Approximately 44% of Snapchat's users were aged 18 to 24, compared with 20% of Facebook's users according to Ampere Analysis. This could possibly be due to decline in the personalisation

of the Facebook experience due to its flooding users' timelines with more and more commercial messaging. As a result, future cyberstalking research should consider looking at sites other than Facebook.

A large proportion of included articles investigated cyberstalking within the context of an ex-intimate relationship, so the identified independent variables fell under the theme of relational issues. As a result, this review provides support for RGPT's utility in the context of cyberstalking, thus supporting previous research by Cole (2014). RGPT posits that for some, relationships are seen as goals and therefore those who are persistently pursuing a relationship have exaggerated the importance of this to themselves. They may believe a relationship to be the only way that they can achieve a positive view of themselves. Because these individuals place such value on the goal of a relationship, when the pursuer cannot achieve the goal (e.g., the relationship), he or she could then ruminate, experience strong negative affect, and obsess over the targeted person. Thus, cyberstalking could be a means of obtaining information that will help an individual reach their goal.

It is also possible that low self-esteem might lure individuals to stalking an ex-partner online (easily done on Facebook) in an attempt to search for an answer as to why the relationship ended and to alleviate doubts they might have had about the ending (e.g., partner being unfaithful). Thus, cyberstalking could also be a means of raising one's self-esteem (Mehdizadeh, 2010).

Personality factors were well-researched risk factors within the review. Studies that investigated personality conclusively found aspects of narcissism had a significant impact on cyberstalking perpetration (Furbee,

2015; Smoker & March, 2017; Menard & Piscus, 2014). It is possible that those high in grandiose narcissism are invested in promoting their sense of superiority and therefore may enjoy competing against others who reject them. This may lead some to cyberstalking as a way of searching for information, which would validate that their ex-partner or person of romantic interest is not good enough for them in order to protect their grandiose self-view in the face of rejection.

Alternatively, some individuals high in narcissism are likely to be very sensitive to "injury" from instances such as criticism, defeat or having boundaries placed on them (Yekeley, 2018). This is otherwise known as narcissistic injury, a concept first discussed by Freud in 1914. The "injury" is often followed by narcissistic rage (Kohut, 1972), which refers to a loss of control over one's emotional composure and may range from instances of coldness, irritation or annoyance, to serious outbursts, including verbal and physical aggression (Malmquist, 2006). This may also manifest as stalking or cyberstalking in order to possibly re-establish themselves as the dominant force, reversing feelings of victimisation by causing distress to the other person.

Other traits captured within the Dark Tetrad such as, psychopathy and machiavellianism, were also significant risk factors. Individuals high in trait psychopathy tend to be risk-taking and therefore it is possible they are more drawn to game-playing in intimate relationships (Jonason & Kavanagh, 2010). Cyberstalking enables this malicious game playing whilst allowing physical distance, which is protective from the criminal justice system for perpetrators; it also reduces possible emotional impact.

Machiavellianism is characterised by manipulative behaviours (Jones & Paulhus, 2014), and thus it is likely that these individuals use strategic mating strategies, which if combined with distrust of a romantic partner, could motivate one to use online surveillance to reduce any perceived threat. It is possible that both psychopathy and machiavellianism are equally likely to increase risk of cyberstalking perpetration as they reflect the same underlying core of general antagonism (Egan, Chan & Shorter, 2014).

Overall this review has demonstrated that women are most likely to perpetrate cyberstalking, which is contrary to what we know of offline stalking. This is possibly because the goal of stalking differs between genders. For example, women (more so than men) have been found to stalk in an effort to attain intimacy (Purcell et al., 2001) and as a relationship maintenance tool (Buss & Duntely, 2011), whilst men have been found to stalk to fulfil their desire of finding a mating partner (Baumeister, Reynolds, Winegard, & Vohsc, 2017), or to regain one who has spurned them. Based on the differing gender relational goals, offline stalking is likely a better-suited method for males to attain a mating partner, while cyberstalking is likely a better-suited method for females to achieve their relational goals.

An understanding of gender differences in the relationship between anger and cyberstalking might also explain the gender differences in stalking and cyberstalking techniques (Strawhun et al., 2013). Women reportedly use anger to control and manipulate men, while men more often use physical aggression (Wigman, 2009). Based on this, it is possible that women are more drawn to cyberstalking, as online platforms lend themselves to emotional abuse and manipulations while offline stalking

lends itself more to the exertion of physical aggression to control and manipulate others. This is in line with theories of coercive control, in which gender norms stipulate male physical violence and control over women (Stark, 2007). Whether cyberstalking is associated with reduced rates of physical violence in comparison to offline stalking should be investigated in further research with cyberstalking perpetrators.

An alternative explanation for the high prevalence of females reporting to cyberstalk may be because they perceive the nature of their behaviour causes less harm to victims than male-typical stalking, and thus is less stigmatised or sanctioned (Sheridan, Gillett, Davies, Blaauw & Patel, 2003). However, emotional abuse and psychological harassment are now legislatively recognised as equal to physical abuse (McMahon & McGorrery, 2016).

On the other hand, it may be that men and women stalk and cyberstalk equally but use different methods (Burke et al., 2011). For example, Purcell and colleagues (2001, 2010) have found that female stalkers are more likely to repeatedly telephone their victims than their male counterparts, while Dardis and Gidycz (2017) reported that men endorse more severe cyberstalking related items than women. Additional research on female stalking and cyberstalking behaviour is needed.

The final area of interest that resulted from this review was the impact of adverse early childhood experiences on cyberstalking perpetration. Insecure attachment styles were noted by a number of studies to be associated with cyberstalking perpetration, possibly because this resulted in an individual developing feelings of insecurity, unhealthy interpersonal skills and maladaptive relationship behavior (Malekpour,

2007; Dutton & Winstead, 2006). Fox and Tokunaga's (2015) findings support the view that attachment style is a key predictor of relational and online behaviour. This suggests that understanding an individual's attachment style is important to understanding how they will behave in a relationship and cope with a relationship break-up; it may also provide insights into other relationship issues such as jealousy and deviant online behaviour (e.g., cyberstalking).

Attachment theory posits that one's early life experiences with primary caregivers shapes how their relationships unfold across the lifespan (Bowlby, 1969; 1973). Attachment is fundamental to understanding adult romantic relational behaviour (Etcheverry, Le, Wu, et al., 2013; Fox, Robert & Tokunaga, 2015). In adult romantic relationships anxious attachment is characterised by a diminished sense of self-worth and feelings of uncertainty about relationships, while avoidant attachment is characterised by diminished trust in others and avoiding close relationships (Bowlby, 1969; 1973). Attachment can also predict how individuals behave following relationship dissolution. Avoidant attachment is associated with minimising contact with one's ex-partner (Davis, Shaver & Vernon, 2003) whereas anxious attachment is associated with greater preoccupation with the ex-partner, leading to more frequent attempts to reform the relationship and higher levels of distress (Fagundes, 2012). Furthermore, research has found an association between anxious attachment and unwanted pursuit behaviour after a breakup, such as persistent attempts to contact the ex-partner when the ex-partner is not interested (Langhinrichsen-Rohling et al., 2000; Fox et al., 2015).

Another emerging risk factor under this theme was childhood sexual and physical abuse (Menard & Piscus, 2014). It is likely that children who have been victims of child abuse will also have developed insecure attachment styles (Muller, Lemieux, & Sicoli, 2001), which might further compound one's likelihood to engage in cyberstalking. Furthermore, adverse early childhood experiences appeared to interact with other variables to increase the risk of engaging in the behaviour, particularly personality and substance misuse (Menard & Piscus, 2014). This is explained by an abundance of research, which evidences that personality disorders arise from insecure attachments (e.g., Fonagy & Bateman, 2005; Lyddon & Sherry, 2001).

Strengths and weaknesses of the studies. As identified in the quality assessment, there are limitations among the studies included for review that require consideration. Unfortunately, the measure of cyberstalking was inconsistent across the articles, which meant that synthesising results using meta-analysis was not possible, and generalisation must be done with caution. This is possibly due to cyberstalking being a relatively new area of academic attention, and therefore, as the body of literature increases, there may arise a universally accepted measure. If and when this is the case, an update of the current systematic review using only articles that employ the same measure of cyberstalking would be beneficial. In addition, future research with prospective designs are needed to establish a chronological sequence of the identified risk factors and cyberstalking behaviours.

Positively, all included articles had similarly large sample sizes and tended to have even distributions of men and women, which allowed us to

discern if there were any gender difference in risk factors. In regard to the sample demographics and generalisability, only two studies did not use university students. Generally, using university students is regarded as a limitation in research as these individuals tend to be a subpopulation that Henrich and colleagues (2010) referred to as WEIRD (Western, Educated, Industrialized, Rich, and Democratic), and therefore, they are a poor model for human behaviour and unrepresentative of the general population. However, given the typical demographics of internet users, some of these demographics are likely inevitable and therefore may be a fair representation of the population of interest. Participants would need to have access to specific equipment and knowledge in order to engage in cyberstalking, and they also tend to live in a democracy where access to the internet is not restricted. As a result, a WEIRD sample may be a strength in regard to cyberstalking research.

Furthermore, five of the included studies did not report the number of participants who were defined as cyberstalking perpetrators, and therefore, it cannot be concluded with certainty the degree to which the sample comprised cyberstalkers. In addition, all but one (Cavezza & McEwan, 2014) of the studies relied on participants self-defining as having perpetrated cyberstalking behaviours, which is subject to response bias (Van de Mortel, 2008) and could also be impacted by cultural differences in how the behaviour is defined. For studies that investigated self-reported Facebook behaviours, future studies would be more methodologically sound if they included the actual behaviours of Facebook users rather than their self-report, and also investigated various forms of social networking sites (SNSs) other than Facebook.

Strengths and weaknesses of the current review. The current review integrates the strongest existing literature on cyberstalking perpetration. The review applied a thorough search strategy within eleven electronic databases considered relevant to the field of research. It also conducted a general search using the Internet search engine Google, a hand search of the reference lists of included articles and contacted key authors in the field. As the one author who responded identified no additional articles, the search was considered comprehensive. The inclusion of grey literature in the review was a further strength as it reduced the likelihood of publication bias (McDonagh, Peterson, Raina et al., 2013). However, restricting articles for inclusion to those written in English was a limitation of the review because additional studies may have been excluded (e.g., Comparcini et al., 2016), and generalisation of results may be limited to English speaking cultures.

Implications for future research. Several suggestions for future research have been identified throughout this review. Unfortunately, despite the growing academic interest in stalking and cyberstalking over the past 20 years there appears to be no consensus regarding definition and measurement of the behaviour. It is possible that this is because research is being conducted cross-culturally, and might be impacted by, for example: different legislation, different mental health systems, and different prevalence due to differing access to the Internet. However, unless we are able to develop universal tools of measurement, our understanding will continue to be restricted.

The review also found a lack of consensus regarding the context in which cyberstalking was investigated. For example, some researchers

specifically investigated cyberstalking occurring on Facebook, whilst others were broader and investigated cyberstalking via communication technology (e.g., cell phone, email, social network sites). Research that only looks at specific domains, such as Facebook, might limit the generalisability and the overall understanding provided by the results as the nature of differing domains affords variation in cyberstalking methods. For example, tracking another person's location or sabotaging their reputation by posting private information or photographs may be specific to Facebook.

In addition, Facebook is not without its limitations and has declined in its popularity, particularly with its younger audience, as platforms such as Snapchat and Instagram have emerged ("Ampere Analysis - Social media video platforms driving viewing screen shift", 2017). This could limit validity and generalisability of research focusing only on Facebook.

In regard to individual risk factors identified by the current review (e.g., relational issues, adverse childhood experiences and attachment variables), future research concerning cyberstalking may benefit from exploring and controlling for these variables. It might also be beneficial if future research did not limit its sample to those who were ex-intimates or intimates, as the picture regarding relational history and risk of perpetration was complex and not definite.

Relational issues were clearly important risk factors for cyberstalking, and therefore further research is necessary investigating precursors to the relational context (e.g., mating effort) and the possible impact on a person's likelihood to engage in cyberstalking. We know that mating is competitive, and that in some cases this is a powerful driver for violent and criminal displays of behaviour (Charles & Egan, 2005), and possibly more so for men

(McKeon, McEwan, & Luebbers, 2015). Discerning how mating efforts might impact an individual's likelihood to engage in cyberstalking behaviours, such as Facebook stalking of an ex-partner, and also general stalking attitudes would be beneficial. As would discerning the relationship between mating effort, personality (specifically narcissistic vulnerabilities) and stalking attitudes. By investigating stalking attitudes and the aforementioned risk factors, it is possible we might develop existing understanding about the crime, and as a result, reduce prevalence through development of interventions and awareness campaigns.

Implications for future practice. The review highlights several implications for practice. The findings of this review revealed key static risk indicators (e.g., gender) and dynamic risk factors (e.g., grandiose narcissism, motivation, and substance misuse), which might be useful to include in revisions of cyberstalking risk measures (e.g., *guidelines for stalking assessment and management*, Kropp, Hart & Lyon, 2008; *stalking risk profile*, Mackenzie et al., 2009). A better understanding of the risk factors of cyberstalking might benefit legislation revisions, helping protect potential future victims. Support for victims should be developed with the intent of assisting both men and women, and thus aim to increase awareness that both genders are prone to perpetrate and be victims of stalking and cyberstalking.

The results here may also be of utility to stalking intervention programmes; these should be targeted at both sexes and may aim to improve interpersonal skills, specifically to shift a cyberstalker's negative relating styles to more positive styles (Kalaitzaki, 2017). However, programmes might be delivered to men and women separately due to the

differential prevalence rates, methods of perpetration, and respective risk factors. Furthermore, intervention services should be tailored for child abuse survivors to ensure that they do not suffer long-term consequences such as cyberstalking.

Lastly, this review has highlighted that Facebook was a significant facilitator of cyberstalking perpetration, and therefore if it were possible to improve Facebook via privacy and security controls, we may reduce the likelihood of individuals using this platform for harmful purposes. Although Facebook already allows users to filter who can view specific contents on their page (i.e., "anyone", "friends of friends", or "friends only"), to block other users at their own discretion and to choose between having a public or private profile ("Basic Privacy Settings & Tools | Facebook Help Centre | Facebook", 2019), future developments on Facebook could include functionality that asks users to verify they know the person they are adding to their network, and also make a functionality showing users who is visiting their profile and how frequently. In addition, individuals who experience high levels of distress from a breakup could be advised by professionals to disconnect from their ex-partner on SNSs, either temporarily or permanently as these individuals are more vulnerable to cyberstalking their ex-partner.

Conclusion

This review is the first systematic synthesis on risk factors for cyberstalking perpetration. Unfortunately, there was a lack of consistency regarding the definition and measurement of cyberstalking, which meant that the overall picture still seems to be complex and generalisation of the

findings is difficult. However, it is hoped that as the literature regarding cyberstalking expands, the picture regarding risk might become clearer.

Despite the lack of consistency mentioned, the review has nonetheless highlighted key risk factors associated with cyberstalking perpetration, such as attachment style, relationship issues, personality, emotional functioning and gender, which builds upon our understanding of many kinds of antisocial behaviour. As a result, suggestions have been made regarding assessment and intervention for possible cyberstalking perpetrators, as well as suggestions for safety features on SNSs, future research and also legislation, which would benefit from revisions to include more detail related to cyberstalking.

CHAPTER 3

Primary Research Project

Untangling the influence of mating effort, dark personality traits and the use of Tinder and Facebook on stalking attitudes.

Abstract

The current study investigated individual stalking attitudes and their associations with a number of variables including: the Dark Triad (DT) traits; personality; mating effort (ME); motivations for using the dating application Tinder; and behaviours on the Social Networking Site (SNS) Facebook. Stalking attitudes were measured using the Stalking Related Attitudes Questionnaire (SRAQ) in a general community sample ($N = 173$). Multiple regression analyses produced a predictive model of stalking attitudes, which included: being male; younger age; a decrease in honesty-humility, openness and venting on Facebook; and an increase in psychopathy, narcissism, covert provocation on Facebook and being motivated to use Tinder to find love. A significant positive relationship was found between ME and stalking attitudes for both genders, however the association was most significant for females, which was contrary to what was expected based upon prior literature. Recommendations were made for future developments of Tinder and Facebook, as well as for the improvement of perpetrator risk assessment tools.

Keywords. *Stalking, Facebook, Tinder, Mating Effort, Personality, The Dark Triad, and Stalking attitudes.*

Introduction

Most research on stalking has focused on the prevalence and nature of the behaviour, rather than why individuals engage in it. In understanding why people engage in this behaviour, research emphasises the practical importance, and influence, of attitudes and perceptions of stalking (Sheridan, Davies, & Boon, 2001; Cooper & McEwan, 2017); this is because people largely behave in accordance with their attitudes (Sheridan & Davies, 2000; Sheridan, Davies & Boon, 2001; Bandura, 2002). Stalking attitudes include beliefs that: stalking is relatively harmless and somewhat flattering to the victim; stalking is a nuisance; that stalking is romantic; and victims are to blame (McKeon, McEwan, & Luebbbers, 2015). These findings are all attitudinal, revealing little about the individuals. By examining a number of potential individual differences and their association with stalking attitudes, the current research develops a more personalised understanding of why people might endorse stalking attitudes.

There are several serious misconceptions about stalking. For example, evidence suggests that the general public believes stalkers who are unfamiliar to the victim are most common and likely to be violent (Dennison & Thomson, 2002), while in reality ex-partners are most likely to stalk and escalate to violence (Farnham, James, & Cantrell, 2000; Dietz, 2003; Morewitz, 2003). By dangerously minimising the seriousness of having a relationship history with a stalker, this misconception possibly increases the likelihood of the behaviour's harmful consequences (Farnham et al., 2000; Duff & Scott, 2013; Scott, Duff, Sheridan, & Rajakaruna, 2018).

As attitudes affect behaviour, individual differences in stalking attitudes may correlate with predisposition. As a result, the current research assesses stalking attitude's connection with other variables related to one's relationship history, such as: mating effort, motivations for using the dating application Tinder and behaviour towards (ex)-partners on Facebook. The research also investigates personality variables and their possible impact on stalking attitudes, as previous research has identified that personality traits, including those captured within the Dark Triad (i.e., machiavellianism, psychopathy and narcissism; Pauls & Williams, 2002), are associated with mating effort (Jonason, Webster & Schmitt, 2009) and stalking behaviours (Menard & Pincus, 2014; Sheridan & Boon, 2002; Storey, Hart, Meloy, & Reavis, 2009). Differentiating stalking attitudes helps identify dispositional risk for perpetrating stalking, as well as develops understanding of public attitudes and improves both prevention and intervention efforts. The study's important variables are discussed below.

Mating Effort. Mating effort is the energy an individual invests in locating, courting and sexually interacting with individuals of the preferred sex and age (Quinsey, 2002). Evolutionary psychology theory suggests that humans have evolved divergent sexual desires and strategies which are a recurrent source of evolutionary conflict. Typically, the most reproductively successful females are more selective, as the costs of a poor mate choice are greater due to their increased investment in childrearing (Greiling & Buss, 2000). By contrast, the most reproductively successful male candidates are often those who are risky in their strategies to acquire and retain mates (e.g., aggressive and persistent; Buss, 2003; Duntley & Shackelford, 2008; Walsh & Beaver, 2008).

The competition that arises from attracting a sexual partner is a powerful driver for risky, and potentially antisocial behaviour (Charles & Egan, 2005; Duntley & Buss, 2010). For example, men have been found more likely than women to conceptualise stalking behaviours as appropriate romantic reproductive strategies (McKeon, McEwan, & Luebbers, 2015). Thus, mating effort may potentiate certain males to hold pro-stalking attitudes. This behaviour, though, is a context-specific tactic used by only some individuals. This mating effort and stalking attitude gender bias concurs with the wider literature on gender bias in stalking, too. Indeed, males have higher rates of stalking perpetration (Duntley & Buss, 2010; Spitzberg, Cupach, & Ciceraro, 2010; Purcell, Pathe, & Mullen, 2010). The current research expects that males will also demonstrate greater pro-stalking attitudes.

Many stalking behaviours are commonly perpetrated by someone the victim knows, most frequently within a romantic or sexual relationship (Spitzberg & Cupach, 2007), something also true for cases of sexual aggression (Black et al., 2011; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). This trend is likely to be partly explained by sexual precedence, i.e., having previously engaged in consensual sex (Bogle, 2007; Stinson, 2010). Sexual precedence produces a sense of entitlement in many perpetrators that contributes to sexual aggression and behaviours like stalking (Livingston, Buddie, Testa & VanZile-Tamsen, 2004). Literature on sexual precedence lends support to the possible association between mating effort and stalking attitudes, something explored in this research. Likewise, the research herein considers gender differences among the

possible associations between stalking attitudes and individual factors of interest.

The Dark Triad. Previous research has found an association between mating effort (Egan & McCorkindale, 2007) and stalking (Menard & Pincus, 2014; Storey et al., 2009) with aspects of the Dark Triad (DT). The mating effort association is evidenced by more sex partners in persons higher on DT traits (Jonason et al., 2009). However, other factors could play a role in this association, such as attractiveness (Holtzman & Strube, 2010; Visser, Pozzebon, Bogaert & Ashton, 2010). The stalking association is discussed below in more depth.

The Dark Triad (DT) refers to three closely related, yet independent personality traits: machiavellianism, narcissism and psychopathy (Paulhus & Williams, 2002). These traits are associated with transgressive and norm-violating behaviour (Furnham, Richards, & Paulhus, 2013). Although they are characterised individually, they also have robust intercorrelations (Paulhus & Williams, 2002) and overlapping themes of: callousness (Jones & Paulhus, 2011); egocentrism; low agreeableness; low humility (Paulhus & Williams, 2002); and an attitude of entitlement (Bushman, Bonacci, van Dijk, & Baumeister, 2003). All of the personality terms are defined in the thesis glossary.

Narcissistic personality traits can increase aggressive reactions to rejection and provocation (Martinez, Zeichner, Reidy & Miller, 2008; Twenge, & Campbell, 2003), which can trigger behaviours such as stalking in response to competitive romantic pursuit, failure or rejection (Montero, 2002; Mullen, Pathé, & Purcell, 2000). Narcissistic reactance theory suggests that this association can be explained because deprivation of

specific sexual options can increase desire in men, thus inspiring sexual coercion (Baumeister, Catanese & Wallace, 2002). Given the research associating narcissism with sexual coercion (Baumeister et al., 2002) and aggression (Bushman et al., 2003), narcissism is also likely to be related to stalking and stalking attitudes.

Persons high in trait psychopathy are likely unempathetic, selfish, vindictive and risk-taking, so may be drawn to game-playing in intimate relationships, including stalking (Jonason & Kavanagh, 2010). Psychopathy has also been significantly related to sexual coercion (Camilleri & Quinsey, 2009). Storey and colleagues (2009) specifically found that psychopathic traits may be important in the assessment and management of stalking risk. Although the DT is associated with various types of negative psychosocial outcomes, the dominant trait is psychopathy when explaining various types of malevolence (Muris et al., 2017). Additionally, all three DT traits are more prominent in men than in women, with psychopathy as the strongest male-linked trait (Muris, Merckelbach, Otgaar, & Meijer, 2017). Given the research associating psychopathy and stalking (Storey et al., 2009), and their gender bias, there is likely also an association between stalking attitudes and psychopathy in males.

So far, an argument has been provided for a possible relationship between pathological personality traits, mating effort (Westhead & Egan, 2015) and stalking behaviours, aiming to then explore this possible relationship by looking at stalking attitudes. Given the evidence that attitudes impact behaviour, we may make inferences about stalking behaviours by investigating stalking attitudes. This would enable the development of targeted awareness campaigns, as well as victim risk

screening tools, including linking stalking to other antisocial personality expressions and their possible underlying mechanism. In addition to the aforementioned variables, the research will also investigate how social networking impacts them.

Social Networking Sites (SNS). The Internet has created a novel ecological niche for mating display (Phillips, 2009), as it provides an exponential amount of opportunities to develop personal networks. However, it is also a popular context for criminal activities, such as public harassment (Lyndon et al., 2011), unwanted sexting (Hasinoff, 2012) and cyberstalking (Reyns, Henson & Fisher, 2011; Elder, 2014). This is possibly because SNSs have led to desensitization and normalization of cyberstalking-like behaviours, as they can habituate the surveillance of others (Tufekci, 2008). If cyberstalking-like behaviours have been partly normalized, we might also find a similar relationship for stalking attitudes. Therefore, individuals' SNS behaviour is of interest for the current research. Specifically, the SNSs Facebook and Tinder will be investigated to illuminate the association between using these sites and stalking attitudes.

Tinder and Facebook share the ability to promote, facilitate and maintain intimate relationships (Lampe, Vitak, Gray & Ellison, 2012; Tokunaga, 2011; Sumter, Vandenbosch & Ligtenberg, 2016). These platforms are relevant because it is in the context of ex/-intimate relationships that stalking most often occurs. In addition, the sites are associated in their configuration, as users link their Facebook with their Tinder account to share information including images and friends. This made recruiting participants with profiles on both sites more likely (Carman & Choo, 2017).

Other platforms that could have been included in the research include YouTube, WhatsApp, Instagram and Snapchat, which were all ranked within the most popular social networking sites of April 2019 ("Global social media ranking 2019 | Statistic", 2019). However these were not chosen, as Facebook was the number one SNS according to the global social media ranking data and, in regard to ranking specifically for online dating applications, Tinder was ranked either the first or second most popular in 2018 ("Tinder Revenue and Usage Statistics -2018", 2019).

Facebook. Facebook is an expansive SNS which had more than 1.37 billion daily active users on average for September 2017 ("Facebook newsroom", 2018). Aside from social networking, Facebook has been used by some for other purposes; for example, it has become an indirect platform for romantic pursuit (Lampe et al., 2012; Tokunaga, 2011). Although many users might use Facebook to check up on friends or ex-partners, with no malicious or stalking intent, surveys associated using Facebook with interpersonal jealousy and mate guarding among ex-/intimate partners (Phillips, 2009). In addition, Lyndon and colleagues (2011) found that users demonstrate potentially harmful behaviours related to cyberstalking on Facebook, such as covert provocation (e.g., taunting the subject indirectly through status updates and wall posts about them), public harassment and venting. These three factors will be used to discern whether engaging in these types of potentially harmful behaviours is associated with stalking attitudes. All of the Facebook behaviour terms are defined in the glossary.

Furthermore, research has identified significant associations for Facebook behaviour with both general personality (Amichai-Hamburger & Vinitzky, 2010) and DT constituents. A significant positive association was

found between narcissism and activity on Facebook, such as time spent on Facebook, increased number of friends and posting more photos of oneself (Mehdizadeh, 2010; Buffardi & Campbell, 2008; McCain & Campbell, 2018). This is possibly because those high in narcissism are invested in promoting their sense of superiority. If narcissism is related to stalking attitudes, possibly those high in narcissism will report higher rates of stalking-like behaviours on Facebook.

Tinder. Tinder is a relatively new online platform to initiate romantic or sexual relationships (Bosker, 2013), and thus research related to Tinder is novel. Sumter and colleagues (2016) used an online survey of 18-30-year-old people who use Tinder, and identified six motivations for this, namely: love, casual sex, ease of communication, self-worth validation, thrill of excitement and trendiness. These motivations are robust and are in line with the literature on online dating (Gudelunas, 2012; Van De Wiele & Tong, 2014). As a result, they will be used in the current study to investigate Tinder use among the general population and its possible association with stalking attitudes. All of the Tinder motivation terms are defined in the glossary.

The way individuals use Tinder varies greatly, and these differences in motivation could be related to mating effort. This is because Tinder allows users to assess whether they are attracted to an individual and to contact them immediately, which could therefore be an optimal mating strategy for males from an evolutionary perspective (Buss, 2003). However, it also has the potential to provide an environment for other uses, including stalking.

Stalking might be made viable on Tinder due to its location functionality, which tells a user how close a potential match is. Research

indicates that this geo-locating can easily be infiltrated to 100-foot proximity (Sahnoune, Yep & Aïmeur, 2015; Seward, 2013; Summers, 2014). In addition, its connection to Instagram and Facebook provides avenues for information gathering across multiple platforms, which makes this a more desirable platform for potential stalkers.

Previous research found that people whose self-worth was based upon their relationship status demonstrated higher levels of obsessive pursuit behaviours and/or stalking (Park, Sanchez, & Brynildsen, 2011; Cupach et al., 2000). This is likely because Tinder can serve as a means of regulating one's positive self-views through its matching mechanism. It is therefore possible that there may be an association between the motivation to use Tinder for self-worth validation and stalking attitudes. In addition, Buffardi and Campbell (2008) found that individuals with narcissistic traits used relationships to regulate their positive self-views. Thus, it is also worth considering that personality might play a role in the association between Tinder motivations and stalking attitudes.

Using Tinder might also have a negative association with stalking attitudes. This is because Tinder's very purpose allows people to feel connected to one another and communicate easily, as well as it allows people to demonstrate mating displays on a consensual platform. In line with literature on online dating and the evolutionary psychology perspective (Greiling & Buss, 2000; Buss, 2003), Sumter and colleagues (2016) found that men were more likely to report using Tinder for casual sex. Based on what we know of Tinder's configuration and functions, if Tinder provides sexual partner candidates to users, using it for casual sex might reduce the likelihood of predatory stalking in those predisposed (Mullen, Pathé &

Purcell, 2008; Miller, 2012). This is because predatory stalkers are most likely to be motivated to stalk for sex. However, because Tinder and stalking literature is novel, we can only speculate and will rely on the current research to address these ideas.

Aim

Based upon the literature reviewed, there is a nomological network of potential predictors of stalking attitudes, which include: mating effort; personality; individuals' behaviour on Facebook towards an (ex)-partner; and individuals' motivation to use Tinder. It is important to think about stalking attitudes, as attitudes are consistently reported to be precursors for behaviour (Sheridan, Davies, & Boon, 2001; Cooper & McEwan, 2017), and therefore, provide us with insight into behaviour. Additionally, developing our understanding may have repercussions for legislation and enforcement (Buhi, Clayton, & Surrency, 2009), as well as awareness and prevention campaigns.

Research Hypotheses

Based on what we know of Facebook as a tool for romantic pursuit (Lampe et al., 2012; Tokunaga, 2011), surveillance and "Facebook Stalking" of an ex-intimate (Lyndon et al., 2011), it is expected that:

H1: high endorsement of stalking attitudes will be significantly associated with high scores of covert provocations, public harassment and venting towards an intimate or ex-(partner) on Facebook.

Given the research on Tinder motivations (Sumter et al., 2016), and what we know of mating effort (Greiling & Buss, 2000; Buss, 2003), as well as personality (Buffardi & Campbell, 2008), it is expected that:

H2A: there will be a negative association with using Tinder for casual sex and endorsement of stalking attitudes.

H2B: there will be a positive association with using Tinder for self-worth validation and endorsement of stalking attitudes.

Based upon the literature regarding mating effort and stalking behaviours, which indicates that men are more at risk of stalking-like behaviours (Charles & Egan, 2005) and attitudes (McKeon, McEwan, & Luebbers, 2015), it is expected that:

H3: there will be a greater association for men compared to women between high mating effort and high endorsement of stalking attitudes.

Given research on the Dark Triad, mating effort, Facebook behaviours and Tinder motivations, it is expected that:

H4: higher scores of **a)** mating effort, **b)** psychopathy, **c)** narcissism, **d)** covert provocation on Facebook, **e)** venting on Facebook, **f)** public harassment on Facebook and **e)** and using Tinder for self-worth validation, will all be included in a positive predictive model of stalking attitudes.

Method

Participants. Based upon Cohen's (1988) recommendations for a moderate effect size (0.15) and a $p = .05$ significance level using a multiple regression, power analysis suggested a minimum of 163 participants were required to achieve a power of 0.8. Study inclusion criteria were: being over 18 years, fluency in English, having profiles on Tinder and Facebook either currently or in the past and providing informed consent. Participants were recruited online over Facebook, Tinder and participant forums, as well as via email; when contacted, all were asked to snowball the link to the online

survey. See Appendix P for details of the email sent to potential participants and Appendix Q for details of the Facebook and Tinder messages sent to potential participants.

173 participants were recruited for the study (64 Male, 109 Female). Age ranged from 18 to 47 years ($M = 25.01$, $SD = 4.84$). Participants reported their sexual orientation (86.3% Heterosexual, 2.3% Homosexual, 10.3% Other). Of the sample, 57.7% were White British, 18.9% were White European, and the remaining 23.4% were either: Black African, Irish, East Asian, Mixed Ethnic Background and Other. The average years in education was 16.3 ($SD = 3.3$), the mode of years in education was 17 years, which is the equivalent of completing up to a degree at university. 12% ($N = 22$) of participants reported themselves to currently or in the past have suffered from a mental health issue, and 21.7% ($N = 38$) reported to have been a past victim of stalking. Of the 21.7% who reported to have been a past victim of stalking, 73.7% were female and 15.8% reported they had a past or current mental health difficulty.

Procedure. This study employed a regression design in which stalking attitudes was the criterion outcome, and the predictor variables were gender, age, years in education, ME, the HEXACO-60 personality traits, the DT, Tinder motivations and Facebook behaviours. Participants provided informed consent, then completed the demographic questions (see appendix R) and then six standardized questionnaires in the following order: ME, Facebook, Tinder, SDT, HEXACO-60 and SRAQ. Participants next answered 6 free recall questions related to Tinder and Facebook use, which are used in a secondary study of this topic (Chapter 4 of the thesis). At the survey's end, participants were given information, including details of victim

support organisations, help lines and charities associated with stalking. A pilot study tested for any errors in the online survey and indicated that it would take approximately 25-30 minutes to complete.

Ethical approval was given from the Division of Psychiatry and Applied Psychology (DPAP) Ethics Committee of Nottingham University, reference number 226. The British Psychological Society's Ethics Guidelines for Internet-Mediated Research (British Psychological Society, 2013) was adhered to in the carrying out of this research.

Measures. All participants gave information regarding their gender, age, ethnicity, number of years in education, whether they had a history of mental illness or stalking victimisation and their relationship status at the time. They then completed six psychometric questionnaires. The questionnaires comprised:

1. Facebook Survey (Lyndon et al., 2011; Appendix G)

The Facebook Survey is a fourteen item self-report measure of individual's likelihood to use Facebook to communicate with, monitor, or harass an ex-partner. Responses are given on a four-point Likert-type scale. The individual dimensions of the Facebook survey show good internal reliabilities: Covert provocation $\alpha = .81$, public harassment $\alpha = .79$, and venting $\alpha = .88$ (Lyndon et al., 2011).

2. Mating Effort Scale (MES; Rowe et al, 1997; Appendix H)

The gender-neutral adapted MES is a self-report measure that consists of ten items that measure individual variation in mating effort. Responses are given on a five-point Likert-type scale. Higher summed scores indicate greater ME. The scale shows good reliability $\alpha = .76$ (Weiss, Egan & Figueredo, 2004).

3. Stalking Related Attitude Questionnaire (SRAQ; McKeon, 2010; Appendix I)

The SRAQ is a thirty-four item self-report measure of attitudes and beliefs related to stalking. Responses are given on a seven-point Likert-type scale. Higher total scores indicate greater agreement with the stalking attitude. The total SRAQ has been reported to have excellent reliability $\alpha = .92$ (McKeon, McEwan & Luebbers, 2015).

4. The Short Dark Triad (SDT; Jones & Paulhus, 2013; Appendix J)

The SDT is a twenty-seven item, self-report measure of personality traits associated with the DT. It has three parts with nine items each, and which examine Machiavellianism, narcissism, and psychopathy. Responses are given using a five-point Likert-type scale. Higher mean scores represent greater presence of each trait. The SDT has good reliability, with subscales showing reliabilities of: Machiavellianism $\alpha = .71$, narcissism $\alpha = .74$ and psychopathy $\alpha = .77$ (Jones & Paulhus, 2013).

5. Tinder motivations (Sumter et al., 2016; Appendix K)

The Tinder motivations questionnaire is a forty-six item self-report measure of six differing motivations to use Tinder. Responses are recorded on a five-point Likert-type scale. Higher mean scores indicate greater agreement with the motivation. The questionnaire is generally reported to have good reliability (with the exception of subscales thrill and trendiness). The subscales showed reliabilities of: love $\alpha = .88$; casual sex $\alpha = .87$; ease of communication $\alpha = .89$; self-worth $\alpha = .87$; thrill $\alpha = .47$, and trendiness $\alpha = .65$ (Sumter et al., 2016).

6. The HEXACO-60 (Ashton & Lee, 2009; Appendix L)

The HEXACO-60 is a self-report personality inventory measuring six personality dimensions: Honesty-humility, emotionality, extraversion, agreeableness, conscientiousness and openness to experience. All of the personality terms are defined in the glossary. Responses are recorded on a five-point Likert-type scale. Higher scores represent a stronger presence of each trait. The HEXACO-60 has evidenced good internal consistency, with reliabilities for each dimension ranging from $\alpha = .73$ to $\alpha = .80$ in a community sample (Ashton & Lee, 2009).

Statistical analysis. Data were analysed using SPSS 24.0 (SPSS Inc.) for Mac, initially testing for reliability and normal distribution. Mean scores were calculated for all personality measures, Facebook behaviours and Tinder motivations, and scores were summed for the MES and SRAQ. All statistical analyses were reported with one-tailed levels of significance, and with an alpha set at .05. Parametric correlations were conducted to assess the hypothesized associations (See Table 2.). To test the validity of the measures, a principal components analysis with varimax rotation was used to see how the measures related to one another. Varimax rotation was used because it separates out the factor measures maximally in order to best understand the psychological constructs that might be shared.

An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable ($KMO = .74$). Bartlett's test of sphericity was $p < .001$. A factor analysis does not provide a prediction model, so regressions were used to see if it was possible to predict stalking attitudes from the measured constructs. Regression analyses took the form in which demographics, followed by the HEXACO-

60, then the SDT, then ME, then Tinder motivations and then Facebook behaviours were entered as separate blocks, thereby enabling the incremental validity associated with the predictors to be calculated from the general to the specific. The significance of individual standardised beta weights indicated which measures in the separate blocks were influencing the criterion outcomes.

Results

Preliminary analysis. Preliminary analysis indicated that a number of scales were impacted by extreme outliers (covert provocation, public harassment, venting and “stalking isn’t serious” attitude), which were all positively skewed. However, as the extreme outliers were of most interest for the current research, due to them being most associated with the outcome of interest, data transformations were not conducted. All other data were normally distributed (See Table 1b. in Appendix M). The current study obtained good reliabilities for all measures (See Table 1a.).

Table 1. Summary psychometric data for entire cohort.

	Subscale Mean (SD)	Cronbach's alpha
Total Mating Effort	-8.4 (5.2)	.62
Covert provocation	6.7 (3.6)	.76
Public harassment	5.3 (1.0)	.66
Venting	2.1 (0.5)	.89
Love	12.4 (4.7)	.90
Casual sex	15.1 (4.4)	.89
Ease of communication	18.6 (4.5)	.84
Self-worth	15.6 (5.1)	.90
Thrill	5.5 (1.8)	.60
Trend	9.7 (2.5)	.60
Machiavellianism	29.5 (5.4)	.81
Narcissism	24.8 (5.5)	.74
Psychopathy	19.5 (5.6)	.73
Honesty-humility	29.5 (5.4)	.65
Emotionality	33.0 (7.0)	.82
Extraversion	33.7 (6.5)	.80
Agreeableness	31.0 (5.7)	.70
Conscientiousness	36.0 (6.2)	.80
Openness	35.7 (6.3)	.76
Isn't serious	43.2 (16.6)	.90
Romantic	34.6 (10.7)	.81
Victim blame	21.9 (8.1)	.80
Total SAQ	82.2 (25.6)	.92

Comparing means. Independent samples t-test comparing the mean total stalking attitude score found males ($M = 88.05$, $SD = 28.69$) scored significantly higher than that of females ($M = 78.8$, $SD = 23.03$), $t(171) = 2.33$, $p = .03$. This was in line with surrounding literature and the expectations of the current research.

Correlation statistics. Pearson's correlation analyses were run to test for the hypothesised patterns of association between ME, Facebook behaviours (covert provocation, public harassment and venting) and Tinder motivations (love and casual sex) with stalking attitude score, which is

displayed in Table 2a. See Appendix M (Table 2b) for a full correlation matrix of all variables in the study.

Table 2a. Pearson correlation of the independent variables for hypothesis 1 to 3 (N=173)

	ME	Self-worth	Casual Sex	Covert provocation	Public harassment	Venting
Total SRA	.29***	-.08	-.06	.22**	.06	-.01
Total SRA (Male)	.26*	-.11	.01	.14	-.07	-.13
Total SRA (Female)	.28**	-.1.	.00.	.34***	.17*	.15

Table legend: SRA = Stalking Related Attitudes, ME = Mating Effort. Significance (one-tailed) * $p < .05$. ** $p < .01$. *** $p < .001$.

The data showed that only one possibly harmful behaviour on Facebook demonstrated a significant positive association with stalking attitude scores, which was covert provocation $r(171) = .22, p = .01$. This offers partial support to hypothesis one. Upon closer inspection of this association for a difference in gender, it was only significant for women $r(107) = .34, p = .001$.

The current data did not meet the assumptions made in hypothesis 2A or 2B, as casual sex motivation to use Tinder showed no significant relationship with staking attitude scores for males $r(62) = .01, p = .94$, nor for females $r(107) = .00., p = .98$. Self-worth motivation to use Tinder was not significantly associated with greater staking attitude scores for males $r(62) = -.11, p = .39$, nor for females $r(107) = -.10, p = .35$.

Greater mating effort was associated with greater staking attitude scores for both males $r(62) = .26, p = .04$ and females $r(107) = .28, p = .004$. However, the difference between these associations was not statistically significant, $z = -.13, p = .90$. Hypothesis three was therefore rejected, as the data did not show men to have a greater association between high mating effort and pro-stalking attitudes versus women.

Factor analysis. Factor analysis of the personality, Tinder motivations, Facebook behaviours, stalking attitudes and mating effort revealed four rotated dimensions with eigenvalues over 1.71; this criterion being recommended by parallel analysis (Horn, 1965), a technique used to avoid over-factoring data. The reason for choosing parallel analysis to determine the number of components to retain was because this has been consistently cited as the most accurate in determining the threshold for significant components, variable loadings and analytical statistics when decomposing a correlation matrix (Crawford, Green, Levy, Lo, Scott, Svetina & Thompson, 2010; Matsumoto, 2017). The rotated dimensions cumulatively explained 52% of the variance. The output is displayed in Table 3.

Table 3. Factor analysis of study constructs and item loadings.

	1	2	3	4
ME				
Covert provocation			.74	
Public harassment			.87	
Venting			.88	
LOVE				
Casual sex		.54		
Ease of		.60		
Communication				
Self-worth		.76		
Thrill		.74		
Trend		.60		
Machiavellianism	.54			
Narcissism				.54
Psychopathy				
Honesty-humility				
Emotionality				-.68
Extraversion				.59
Agreeableness				
Conscientiousness				
Open				
Isn't serious	.85			
Romantic	.87			
Victim blame	.87			
Eigenvalue	4.98	2.57	2.09	1.87
% of Total Variance	22.63	11.67	9.48	8.48

The first factor (eigenvalue = 4.98, 22.63% variance explained) had loadings of .54, .85, .87 and .87 for machiavellianism, stalking isn't serious, stalking is romantic and victim blaming, respectively. This factor was labelled "social manipulation". The second factor (eigenvalue = 2.57, 11.67% variance explained) had loadings of .54, .60, .76, .74 and .60, for casual sex, ease of communication, self-worth, thrill and trend, respectively. These were all motivations to use Tinder aside from the love motivation, and thus the factor was labelled "Tinder motivations". The third factor (eigenvalue = 2.09, 9.48% variance explained) had loadings of .74, .87 and 0.88 for covert provocation, public harassment and venting, respectively. These were all possibly deviant and harmful Facebook behaviours, and thus the factor was labelled "harmful Facebook

behaviours". The final factor (eigenvalue = 1.87, 8.48% variance explained) had loadings of .54, -.68 and .59 for narcissism, emotionality and extraversion, respectively. These related to individual characteristics such as grandiose sense of self, emotional detachment from others and feeling confident and positive about oneself, labelled "outgoing and self-absorbed".

Regression. Stepwise multiple regression was used to test whether the DT and normal personality traits, ME, Facebook behaviours and motivations to use Tinder predicted stalking attitudes (See Table 4). A blockwise regression model was used, employing ranked outcome data to satisfy the needs of non-parametric testing. As the results so far had indicated that males have significantly greater pro-stalking attitude scores, gender was entered at the first step of the regression along with age and years in education, following ME at step two, all six dimensions of the HEXACO-60 at step three, the three DT traits at step four, at step five the six Tinder motivations and, at step six, Facebook behaviours were then entered. For both regressions, multicollinearity, auto-correlation and homoscedasticity were assessed as acceptable.

Table 4. Stepwise multiple regression of all independent variables with the outcome variable.

	RSquared	F ratio	FChange	Significance	Predictors
Total SRAQ	.37	1, 162	9.08	The model was significant at $p < .001$	Male, decreases in openness, age, ME, honesty-humility, and venting, and increases in psychopathy, narcissism, love motivation and covert provocation.

The final overall model had the following standardised predictors: Gender ($\beta = -.22, p = .002$), Openness ($\beta = -.26, p = .001$), Age ($\beta = -.11, p = .1$), ME ($\beta = -.06, p = .49$), honesty-humility ($\beta = -.12, p = .11$), venting ($\beta = -.24, p = .001$), psychopathy ($\beta = .21, p = .03$), narcissism ($\beta = .22, p = .003$), love motivation ($\beta = .16, p = .01$), and covert provocation ($\beta = .25, p = .003$).

Discussion

The main aim of this study was to establish the relationship between a nomological network of individual factors and stalking attitudes. These factors included demographics, normal personality and DT traits, Facebook behaviours, motivation to use Tinder and ME. The reasons for investigating these were to improve prevention and intervention efforts by improving our understanding of possible risk factors regarding stalking attitudes.

Individual risk factors of stalking attitudes. The data did not support the assumptions of hypothesis one, that pro-stalking attitudes would be significantly associated with high scores of the three Facebook behaviours (covert provocation, public harassment and venting). However, closer inspection did reveal a significant positive association between pro-stalking attitudes and covert provocation among women.

The finding, likely representative of the differing methods of stalking used across gender, is concordant with a systematic review of the literature (in Chapter 2 of the thesis), which found that females admitted greater frequencies of cyberstalking perpetration than males. The current findings also somewhat corroborate those of Dardis and Gidycz's (2017) research, which reported that females were more likely to use covert methods of stalking such as hidden camera, GPS, and tracking social media check-ins,

as opposed to males who were more likely to use overt methods such as sending excessive threats via text and email. However, it is possible that these Facebook behaviours reflected interpersonal curiosity rather than deviant stalking attitudes. It is also possible that individuals were not aware they could have been engaging in such behaviours online, as the configuration of Facebook habituates the surveillance of others, normalising such behaviours as "Facebook stalking".

Contrary to expectations regarding Tinder motivations and stalking attitudes, no significant associations emerged. One possible explanation is that Tinder mitigates the risk of unwanted romantic pursuit and/or stalking through its practical configuration. This is because both users must express that they like each other before "matching". Only then are they allowed to converse, and if one does not like the other after talking, they may "block" them. Nevertheless, it is important that research investigates why people use Tinder as well as its possible association with stalking because, as explained earlier, it has a number of features which possibly make it desirable to stalkers. It is also a platform we know little about in terms of its ability to facilitate stalking, and for that reason, it warrants research.

It is also important to consider that new technology has changed both the dating landscape and what we understand of mating effort. Therefore, future research might wish to investigate this before any firm conclusions can be made about its association with stalking attitudes or behaviours.

The data were complimentary to existing offline stalking literature in their indication that males are most likely to highly endorse stalking

attitudes. However, in regard to cyberstalking, previous research captured in the systematic literature review in Chapter 2 indicates that women are most likely to report that they stalk in this context, and therefore, we might have expected stalking attitudes to be higher for women. It is likely that this contradiction is mostly due to the SRAQ's lack of items regarding cyberstalking, meaning it was unable to make such a contextual distinction. Despite this, on closer inspection of the data there was a significant association for women between greater mating effort and high endorsement of stalking attitudes. From this we might infer that female stalking attitudes and cyber/stalking propensity might be motivated by a degree of romantic pursuit. This idea should be built upon in future research as it could add to our understanding of the female stalker profile.

As mentioned, the use of technology to facilitate romantic pursuit is exceedingly common and has likely changed the dating landscape (Finkle, Eastwick, Karney, Reis, & Sprecher, 2012). Because of this, expressions of ME might have shifted and dating may actually require less effort. For example, online communication is time and cost efficient, meaning people can pursue more than one individual at a time and thus their chance of mating success is arguably higher. The internet also allows one to share and consume more information than they could in real world interactions, meaning it is easier and quicker to make mating decisions, such as on attractiveness or whether a person is worth pursuing. Additionally, it reduces the impact of possible rejection, as by communicating online it possibly lessens the embarrassment or negative emotions that would be felt in face-to-face rejection.

If this is the case, then the MES might not have best captured ME accurately, and thus future research may consider revising the measure to reflect any changes in ME. In addition, the current research findings should be viewed with caution in this light. Nevertheless, it might be that stalking is over-used as a concept in the social forum of sexuality and should be narrowed into something more specifically problematic in order to deepen our knowledge about associated patterns.

Factor analysis of the study variables revealed four rotated factors. Most interesting to this discussion was factor one, which was labelled "social manipulation". This factor grouped together all stalking attitudes (stalking isn't serious, stalking is romantic and victim blaming) and machiavellianism. This would suggest that stalking attitudes are closely aligned with socially manipulative and callous personality types. This is complimentary to research evidencing association between machiavellianism, sexual aggression (McHoskey, 2001) and sexual harassment (Zeigler-Hill, Besser, Morag & Keith-Campbell, 2016). More specifically, these results suggest that stalking attitudes may form part of a manipulative mating strategy that individuals with high levels of machiavellianism may employ.

Predicting stalking attitudes. Using a regression analysis, a predictive model of pro-stalking attitudes explaining 37% of the variance was produced. The model included: being male; a decrease in openness, age, ME, honesty-humility and venting on Facebook; and an increase in psychopathy, narcissism, love motivation for using Tinder and covert provocation on Facebook. This confirmed the well-established gender bias in relation to stalking perpetration that is evidenced among the current literature base, i.e., being male was predictive of stalking.

Among other demographics of interest, years in education did not appear to impact stalking attitudes, however, age did. Specifically, a decrease in age was predictive of stalking attitudes, as was a decrease in ME. This finding could be explained by how relationships tend to become more serious during emerging adulthood, (Furman, 2002; Garcia, Seibold-Simpson, Massey & Merriwether, 2015), while at the same time, casual sex becomes increasingly common (Grello, Welsh & Harper, 2006), with the need to find a long-term partner becoming progressively stronger. Due to the competition they elicit, these pressures likely give rise to stalking attitudes and behaviours.

Younger persons are also likely to be romantically naïve, and thus more vulnerable to failure, which can increase risk of stalking for certain individuals (Montero, 2002; Mullen et al., 2000). Furthermore, as age increases, there is a shift from mating to parenting effort which is an inevitable part of both genders finding a mate to settle and reproduce with. At that point, it seems reasonable to expect that stalking would be reduced in terms of ME.

In regard to the personality aspect of the model, it is interesting to note that both normal and "dark" personality traits had predictive validity. Specifically, the model showed that a decrease in openness and honesty-humility and an increase in psychopathy and narcissism predicted pro-stalking attitudes. This outcome contributes to the debate within the literature around whether the DT has incremental validity above normal personality (Wertag & Bratko, 2016; Spain, Harms & Lebreton, 2013; Lee & Ashton, 2005), and the finding that honesty-humility is substantially related to each of the Dark Triad traits (Lee & Ashton, 2005). These findings

also complement existing literature which links psychopathy and narcissism to stalking related behaviours (Muris et al., 2017; Montero, 2002; Mullen, Pathé, & Purcell, 2000; Jonason & Kavanagh, 2010) and the view that low honesty-humility is a generalised dark personality trait (Spain et al., 2013). However, it is unlikely that individuals who have high elevations of these traits will respond honestly to self-report assessments used in selection situations. This should be considered when generalising results.

Given the findings regarding personality, the author proposes that this information be used to inform victim and perpetrator risk checklists. For example, including reference to personality traits such as: game-playing (Jonason & Kavanagh, 2010); sexual coercion (Camilleri & Quinsey, 2009); callousness and low agreeableness; an attitude of entitlement (Jones & Paulhus, 2011); aggressive reactions to rejection and provocation (Martinez, Zeichner, Reidy & Miller, 2008; Twenge & Campbell, 2003); a sense of superiority; as well as low openness and honesty-humility dimensions. This is likely to improve risk assessment effectiveness when developing an understanding of perpetrator predisposition.

The current predictive model also suggested that, of all the Tinder motivations, using Tinder to find love was a significant predictor of pro-stalking attitudes. It is important to note that the difference between stalking and normal pursuit behaviours can be very subtle and is dependent on the individual(s) involved as well as contextual factors such as culture (Lippman, 2015; Kim & Dunn, 2002; Roberts, 2002). In addition, a degree of persistent pursuit is not actually problematic but rather fits with reasonable mating strategies/effort when one is single (Smoker & March, 2017) or after a relationship has ended (Logan & Walker, 2017).

However, it is also possible that those who are using Tinder to find love place higher value on the goal of a relationship, and as we know from RGPT (Spitzberg, Cupach, Hannawa, & Crowley, 2008), this can mean an individual is likelier to be sensitive to rejection, which can sometimes make a stalking response more likely (Montero, 2002; Mullen et al., 2000). As a result, future Tinder iterations might consider a mandatory survey when users generate their profiles in order to screen its users. In addition to screening its users, Tinder might also consider delivering safety warning messages, raising awareness of the risk of using Tinder, specifically for love.

However, if Tinder was to screen peoples' motivation for using the app, they would possibly reduce product desirability and thus the number of users it attracts. Specifically, by warning about aspiring to find love through Tinder, it might reduce the number of women who use the platform as, from an evolutionary perspective, we know they are not as motivated by casual sex pairings as males are (Buss, 2003; Buss & Duntley, 2011). This assumes though that users view Tinder in binary love versus sex terms, which is unlikely.

In relation to Facebook behaviours, the predictive model included a decrease in venting and an increase in covert provocation. This is partially contradictory to what was found by Lyndon and colleagues (2011), which evidenced that venting was positively associated with online stalking behaviour. However, the current findings suggest the opposite. It is possible that venting is a less discrete behaviour than covert provocation, and thus less likely to be used by those who are more inclined to stalk.

Additionally, according to the Facebook survey's venting items, the behaviour is possibly more aligned with harassment, while covert

provocation items seem more aligned to social surveillance and/or stalking. This suggests it may be worth doing further research into whether harassment behaviours decrease as stalking behaviours increase. Answering this would be useful in terms of assessing risk. In addition, further qualitative research exploring why individuals engage in these Facebook behaviours would be needed to develop a clearer understanding of the purposes they serve and any possible association to stalking and/or harassment.

It is also possible that the normalization of "Facebook stalking" could have impacted participants responding, whereby they were unaware they were engaging in behaviours on Facebook that could resemble stalking. If this was the case, then it would therefore be beneficial to raise awareness of possible stalking behaviours online. This could be achieved through Facebook pop-ups featuring examples of possibly concerning behaviour, e.g., covert provocation behaviours like looking through an ex-partner's photos to see pictures of them with a new partner, or making posts related to an ex-partner. This might prompt those individuals who are knowingly engaging in stalking related behaviours to reflect on this, hopefully deterring them. Although low level occurrences of online surveillance are not problematic and are products of interpersonal curiosity and social comparison, persistent, repeated surveillance is problematic, and therefore pop-ups could differentiate healthy versus unhealthy covert provocation.

However, with such a recommendation, this might raise user concerns about privacy and therefore Facebook may be unwilling to implement such a measure, as it could reduce its appeal to consumers. This would also be discouraging people from using Facebook to look at other

users, which is the basis for its existence and to a degree is a part of interpersonal curiosity (e.g., Brandtzæg & Heim 2009; Pai & Arnott 2013). The regulation of Facebook is complicated and something that has had much negative media attention, such as following the Cambridge Analytica scandal in 2018 (Wong, 2019). Thus, it is likely that any suggested Facebook changes will also face difficulty. Therefore, it might be more impactful to make recommendations at the individual level, such as around developing awareness campaigns for users.

Positively, there have been television series (e.g., *YOU*, on Netflix 2019) and films (e.g., *The Perfect Guy*, 2015) that depict more realistic stalking scenarios of ex/intimate stalking. These help to develop public understanding of the types of behaviours that constitute stalking and the types of scenarios it is likely to happen in. If the same could be done with more focus on online stalking scenarios using SNSs, this might have a positive outcome in terms of improving awareness.

Future research. A number of suggestions have been made towards future research throughout this discussion thus far, such as, improvements to the MES and further investigation of the link between Tinder and stalking. However, it is also of note that although the SRAQ has been used in other studies, this is the first time that it has been used in relation to the DT, personality, ME, Facebook and Tinder. The measure was demonstrated to be reliable within the sample. However, it is possible that the gendered bias of certain items might have impacted participants responding. Given that research has found that gender stereotypes exist even when items are gender neutral, such as within the SMS (Sinclair, 2006; 2012), it is possible that by making the scale gender neutral, this

might reduce the amount of insight one can gain from using the tool and may not alter responding significantly.

To increase our understanding of why individuals might stalk, and of the difference between Tinder and Facebook in their association with stalking attitudes, it would be beneficial to further investigate individuals' reasons for engaging in possible stalking related behaviours on these platforms. The author intends to investigate this in follow up research using the current research data as well as the free recall data collated at the end of the online survey.

Limitations. Notable limitations of the current study relate to social desirability biases, confounding factors, and the generalisability of the results. The current study included items measuring traits and behaviours that could be viewed as socially undesirable (Spitzberg & Cupach, 2007) and as a result, participants might have demonstrated socially desirable responding (Pedregon, Farley, Davis, Wood, & Clark, 2012). However, in an attempt to counteract the effect of this bias, the current study was anonymous, requiring no personal or identifying information to be supplied.

Further limitations were a lack of metrics for attachment (Lewis, Fremouw, Del Ben & Farr, 2001), and for adverse childhood experiences such as psychical and/or sexual abuse or neglect (Strawhun, Adams & Huss, 2013; Menard & Pincus, 2014). These have been found to be significant risk factors for stalking and/or cyberstalking perpetration (in Chapter 2 of the thesis), and therefore, might have impacted variability in stalking attitudes.

In addition, the study was limited by a focus on those who had a current or past profile on Tinder and Facebook. The author acknowledges

the vast array of online dating apps and SNSs other than Tinder and Facebook. The relative newness of the Tinder motivations measure and the Facebook survey must also be considered. Although both demonstrated good reliability in the current sample, their psychometric properties need further exploration.

Finally, participants in the current research were mostly individuals who had completed up to a university degree or higher, something research has defined as WEIRD (Western, Educated, Industrialised, Rich and Democratic) samples (Henrich, Heine, & Norenzayan, 2010; Machery, 2010) and thus could potentially be a limitation of the present study. However, the Organisation for Economic Co-operation and Development (OECD) defined a countries adult education level as the percentage of people between the ages of 25 and 64 who have completed some kind of tertiary education; they revealed that in 2017, 45.67% of the US and 45.96% of the UK populations had done so ("Education attainment - Adult education level - OECD Data", 2017). This indicates attending university is not as rare as it once was. As a result, the WEIRD population might not be as much of a limitation to research on cyberstalking as once suggested.

Conclusion

The current research data were complimentary to existing literature in their finding that males are most likely to have pro-stalking attitudes, as well as there being an association between greater mating effort and pro-stalking attitudes. Interestingly, a factor analysis revealed that stalking attitudes may form part of a manipulative mating strategy which individuals with high levels of machiavellianism may employ. Although in preliminarily

correlational analysis, no associations were found between stalking attitudes and either Facebook behaviours or Tinder motivations, a regression analysis evidenced certain Tinder and Facebook variables have a degree of predictive validity for stalking attitudes.

Tinder and Facebook were chosen for the current research as according to ranking specifically for online dating applications, Tinder was ranked either the first or second most popular in 2018 ("Tinder Revenue and Usage Statistics (2018)", 2019), and according to the Global Social Media Ranking Statistics (2019) Facebook was the number one SNS. In addition, Tinder's connection to Instagram and Facebook provides avenues to information gathering across multiple platforms, making it more desirable for potential cyberstalkers.

A predictive model of pro-stalking attitudes was also found which explained 37% of the variance. The model included: being male; a decrease in openness, age, ME, honesty-humility and venting on Facebook; and an increase in psychopathy, narcissism, love motivation for using Tinder and covert provocation on Facebook. As can be seen above, the model shows that both normal and "dark" personality traits had predictive validity in stalking attitudes. This was evidenced since within the predictive model both elements of personality were included despite normal personality traits being entered in the early stage blocks and the DT traits in the end blocks. This outcome contributes to the debate within the literature around whether the DT has incremental validity above normal personality. The model also suggests potential dangers in the use of Facebook and Tinder with regard to stalking attitudes, which is important for online safety initiatives.

By demonstrating a nomological network of individual variables that predict stalking attitudes, the current research has enabled a more personalised understanding of why individuals might stalk. Based upon the results, a number of safety recommendations have been made regarding improvements for Tinder and Facebook, as well as intervention strategies such as risk assessments. In addition, suggestions for future research have been made in order to continue developing understanding of stalking, stalking attitudes and why individual might engage in the behaviour.

CHAPTER 4

Secondary Research Project

Associating Stalking Attitudes and People's Reasons for Engaging in Stalking Behaviours on Tinder and Facebook

Abstract

Objective: In order to enhance understanding of the motivations and reasons behind stalking behaviours, this two-part study examines the explanatory language of those who might use Tinder and/or Facebook for stalking related purposes. Language expresses attitudes, emotional experience, and social-cultural norms, all of which significantly contribute to behaviour. This important area of research helps assess propensity for stalking via these online platforms and therefore may assist development of online security controls aimed at cyberstalking.

Method: Sixty-nine participants completed an online questionnaire investigating their stalking attitudes and behaviours on Facebook, then answered free-text questions about specific uses of Tinder and Facebook. Part 1 of this research uses the Linguistic Inquiry and Word Count 2015 software to quantitatively analyse the data. Part 2 of the research performs a qualitative analysis of the data using a social constructionist thematic analysis.

Results: Part 1 results indicated that stalking attitude scores were not differentiated based on whether respondents would or wouldn't communicate with an ex-partner online, contrary to expectations. There were also no meaningful word category differences in responses that added to understanding of stalker motivation. However, it was likely that using text analysis to distil motivation was not possible as it ignored context in participant responses. Part 2 results demonstrated one overarching theme related to the ecological environment of Facebook and Tinder, shaping how individuals interacted within the frame. For both of these ecological environments, there were no particularly dark aspects related to stalking.

Conclusions: Overall, for the ecological environments of Tinder and Facebook there were a set of informal rules that are generated tacitly (Polanyi, 1966) through forms of intuition and formal communication to understand the rules of each environment and how to deploy them. There is a certain amount of testing the nature of these rules as they are always in transition. Whilst some of the behaviours could potentially veer to stalking with the appearance of being civilised, there were no obvious stalking associations.

Keywords: *stalking, Facebook, Tinder, stalking attitudes, text analysis.*

Introduction

Most research on stalking has focused on the prevalence, nature and impact of the behaviour, rather than why individuals engage in it (e.g., Dreßing, Bailer, Anders, Wagner & Gallas, 2014). Research emphasises the practical importance, and influence, of attitudes and perceptions of stalking in understanding why people stalk (Sheridan, Davies & Boon, 2001; Cooper & McEwan, 2017). This is because people tend to behave in accordance with their attitudes (Sheridan & Davies, 2000; Sheridan, Davies & Boon, 2001; Bandura, 2002). For example, male stalking myth endorsement correlates with unwanted pursuit perpetration (Lippman & Ward, 2014). Stalking attitudes include beliefs that: stalking is relatively harmless and somewhat flattering to the victim; stalking is a nuisance; stalking is romantic; and stalking victims are to blame (McKeon, McEwan & Luebbbers, 2015).

Stalking attitudes. Given the research correlating attitudes and behaviour, and related research correlating attitudes towards sexual violence and perpetrating rape (Lonsway & Fitzgerald, 1994; Suarez & Gadalla, 2010), endorsement of stalking attitudes will likely be positively associated with stalking behaviours on social networking sites (SNS), such as, surveying an ex-partner on Tinder and/or Facebook. If so, the current research hopes to better understand people's reasons for this through analysing their explanatory language.

Social Networking Sites. Stalking attitudes and SNS use are relevant given their growing prevalence in facilitating behaviours like obsessive relational intrusion (ORI; Chaulk & Jones, 2011) and stalking (Hasinoff, 2012; Reyns et al., 2011; Elder, 2014; Lyndon, Bonds-Raacke & Cratty, 2011). Although a degree of surveillance on SNSs is to be expected

(Albrechtslund, 2008), as it plays a crucial role in the enactment of relationships (Fox & Warber, 2014; Caprener & Spottswood, 2013), there are concerns that normalising surveillance via SNSs may be desensitizing users to stalking-related behaviours (Tufekci, 2008). This may impact stalking attitudes.

By studying individual explanations for using Tinder and Facebook in a way which could verge on stalking, we will develop further insight into the motivations behind such behaviour. This important area of research helps assess propensity for stalking via these online platforms. Likewise, these findings may assist development of online security controls aimed at cyberstalking reduction, and inform the future development of cyberstalking legislation.

The reason for looking at both Tinder and Facebook is due to evidence of their shared ability to promote, facilitate and maintain romantic relationships (Ellison, Vitak, Gray & Lampe, 2014; Tokunaga, 2011; Sumter, Vandenbosch & Ligtenberg, 2016). Stalking most often occurs in this context (Logan, Leukefeld, & Walker, 2000; Spitzberg & Cupach, 2004; 2007). In addition, both sites are associated in their configuration, as users link their Facebook and Tinder account to share information such as images and friends (Carman & Choo, 2017).

There are distinct differences between these online platforms: Tinder is specifically used for romantic pursuit, whilst Facebook is primarily for social networking. Though these differences may be important when considering stalking and therefore warrant attention as individual platforms, the current research inquires generally about both online platforms to begin to build a picture of possible reasons people give for engaging in stalking-

like behaviours through them. Chapter 3 of the thesis evidenced that for some people, using Tinder to find love and/or Facebook to covertly provoke an ex-partner were associated with pro-stalking attitudes. Thus, there are specific uses of both sites that may attract people who express pro-stalking attitudes. Further investigation into these individuals' explanations for such behaviour would enhance our understanding of risk.

Tinder is a relatively new online platform for emerging adults to initiate romantic or sexual relationships (Bosker, 2013), and thus research related to Tinder is novel. Like other forms of digital social media (see Fox & Anderegg, 2014), Tinder affords a degree of surveillance via screening of potential and received matches. Although this might not necessarily amount to stalking, Carman and Choo (2017) have found that due to Tinder's geolocation feature, the application could be a popular forum for stalkers, as a stalker with enough technical knowledge can acquire a potential victim's location. As a result, it is likely that some individuals might use Tinder for reasons other than its intended purpose.

Unlike Tinder, Facebook is a popular topic among academic researchers, and has increasingly been explored related to stalking (Lyndon et al., 2011; Phillips, 2009). In particular, research identified a number of possibly harmful behaviours displayed on Facebook, such as, surveillance of intimate partners (Phillips, 2009), as well as covertly provoking an ex-intimate (e.g., taunting the subject indirectly through status updates and wall posts), publicly harassing them, and venting about them on Facebook (Lyndon et al., 2011). However, Chapter 3 of this thesis details that of three Facebook behaviour types proposed by Lyndon and colleagues, only an increase in covert provocation and a decrease in venting were predictive of

pro-stalking attitudes. To build upon these prior findings, the current study specifically asks participants questions about why they might engage in behaviours related to covert provocation (e.g., communicating, viewing photos, or staying online friends with an ex-partner) on Tinder and/or Facebook.

Language. Language reflects people's attitudes and how they perceive the world, and therefore explanations for why they engage in a certain behaviour (e.g., search for an ex-partner on Facebook or Tinder) will potentially provide valuable insight (Tausczik & Pennebaker, 2010). The current study investigates people's self-reported explanations for possibly engaging in stalking-like behaviours on Tinder and/or Facebook, and any relationship these may demonstrate with endorsement of stalking attitudes.

Language is analysed because of its tremendous psychological value (Gottschalk & Glaser, 1969; Stone, Dunphy, Smith & Ogilvie, 1966). As a fundamental tool that people use to express their attitudes, language also provides insight into traditions, emotional experience, cultural norms and social customs, that, in turn, make a significant contribution to behaviour. Using language to uncover personal or socially shared understanding and experience is grounded in social representation theory, which examines social and cultural thinking about societal and political issues (Moscovici, 1984; 2000; 2005). This may be applicable to the study of stalking.

There are many differences that can be noted between written and spoken language. Some of these include the use of: contractions such as I'll or don't; slang words; grammar; clauses; level of vocabulary; repetition; personal pronouns; sentence structure; and colloquialisms (Rubin, 1987; Ferraro & Palmer, 2005; Halliday, 2002; Tian, 2013). Most notably is that

spoken language is much more dynamic and instant, meaning it can be less precise (Ferraro & Palmer, 2019), while written language is more formal and should follow the rules of the English language. Spoken language also has intonation patterns and pauses that convey meaning and attitudes, which written text might not convey as well. However, written language helps to make communication effective as there is less opportunity to include unnecessary information in a written document.

The data in the current study are in the form of written language and therefore these noted differences could impact the results. For example, it may be that the data are lacking in contextual and attitudinal information or that, because participants have time to carefully think about their response, they are more likely to respond with social desirability or otherwise construct a response lacking reliability. Thus, the result interpretations should be caveated.

The current research specifically investigates the language used by participants who have high and low endorsement of stalking attitudes, as measured by the Stalking Related Attitudes Questionnaire (SRAQ; McKeon, 2010). The SRAQ is a self-report survey comprised of Likert-type response scales. The purpose of the SRAQ is to measure attitudes linked to stalking by calculating individuals' alignment with stalking myths and stereotypes.

In order to effectively analyse text for emotional, cognitive and structural components, text analysis applications have been developed (Pennebaker, Booth, Boyd & Francis, 2015). Since then, research has evidenced the advantage of analysing language in this way, for example, to improve understanding of stance (e.g., adverbials, modals, and complement clauses) in stalking threats (Gales, 2015; Lord, Davis & Mason,

2008), and threats via social media (Chandramouli, 2011). In the current research, the Linguistic Inquiry and Word Count 2015 software (LIWC2015; Pennebaker et al., 2015) was used. LIWC's central premise is that words people use reveal their psychological and emotional state and may provide insight into perceptions and motivations.

LIWC2015 dictionary variables such as *leisure*, *social processes*, *drives*, *sexual* and *positive emotion* are of interest for this research. The LIWC2015 dictionary details multiple words relating to the selected categories and scans for these in the inputted text. The selecting of these variables is guided by previous research. For example, research discussing general usage of Facebook (Ellison, Steinfield & Lampe, 2007; Joinson, 2008; Lampe, Ellison & Steinfield, 2008; Sheldon, 2008; Wilson, Gosling & Graham, 2012) and Tinder (Sumter et al., 2016), for purposes such as forming and maintaining social capital, relieving boredom, mitigating loneliness, self-enhancement and either casual "hook-ups" or to initiate committed romantic relationships.

Other LIWC variables of interest were guided by previous research on stalking and included: *negative emotions* (Montero, 2003; Mullen, Pathé & Purcell, 2000; Davis, Swan & Gambone, 2012), *power* (Livingston, Buddie, Testa & VanZile-Tamsen, 2004), *sexual* (Ellison et al., 2014; Tokunaga, 2011; Sumter et al., 2016; Montero, 2003; Mullen, Pathé & Purcell, 2000) and *risk* (Buss, 2003; Duntley & Shackelford, 2008; Walsh & Beaver, 2008).

Sexual words are of interest in relation to both Facebook and Tinder use as previous research found people use the platforms to promote, facilitate and maintain romantic relationships (Ellison et al., 2014;

Tokunaga, 2011; Sumter et al., 2016. *Sexual* words might also relate to stalking as previous research has found romantic pursuit failure or competition to be a motivator for some people to stalk (Montero, 2003; Mullen, Pathé & Purcell, 2000).

The three Facebook behaviours investigated in this research (covert provocation, public harassment and venting) have been found to prolong negative emotions and experiences associated with dissolution of a relationship (Lyndon et al., 2011). Likewise, so does the passive strategy of "Facebook stalking" (Marshall, 2012; Fox, Osborn & Warber, 2014). As a result, individuals who engage in any of these Facebook behaviours may use more *negative emotion* words in their responses to free-recall questions regarding an ex-partner.

Text analysis can provide descriptive information about the language used and therefore is a preliminary step towards using language to understand stalking and cyberstalking for research purposes. However, this quantitative analysis of language is limited by its inability to provide rich detail about attitudes, experience and norms. Thematic analysis in comparison offers a richer exploration of the language being discussed. Therefore, the current research will utilise a mixed methods approach. Part 1 will be a quantitative text analysis of the data and Part 2 will be a qualitative thematic analysis of the data.

Thematic analysis (Braun & Clarke, 2006; 2012; 2013) is a method for identifying, analysing, and reporting patterns (themes) within data by drawing upon a close textual analysis to make sense of it within a given set of meanings that require constant researcher reflection. It minimally organises and describes a data set in rich detail.

Braun and Clarke (2006) state that thematic analysis entails researcher flexibility with their theoretical constructs as it can be used inductively or deductively within a pre-coded frame. The current research will use an inductive approach in order to enter into the way that individuals socially construct their worlds. This produces a richer understanding of the data than using a deductive frame, which fails to capture the nuances of meaning and how it is deployed within an individual's way of making sense of their world.

Part 1

Aims

Part 1 of this research aims to analyse individuals' discourses about their use of Tinder and Facebook in conjunction with their stalking attitudes so as to better understand why people might practice various degrees of online surveillance, and ultimately whether this might be associated with endorsement of stalking attitudes.

Hypotheses

H1: For the high stalking attitude group, greater endorsement of stalking attitudes will be positively associated with greater likelihood of communicating with an ex-partner.

H2: For free-text questions regarding an ex-partner, a higher percentage of *negative emotion* and *drives* words will be significantly positively associated with greater endorsement of stalking attitudes.

H3: For questions regarding an old friend, online only friends and preferring online communication as opposed to face-to-face, the LIWC variable *social*

processes will be significantly higher in percent than all other word categories.

H4: Higher scores of any of the three Facebook behaviours (covert provocation, public harassment and venting) will demonstrate a significant positive association with higher use of *negative emotion* words in responses to free-text questions regarding searching for or communicating with an ex-partner.

Method

Design. The current study employed a quantitative cross-sectional design, using an opportunistic snowball-sampling method. The survey was promoted on SNSs, online research participant forums and via university email. All data were collected online using the Bristol Online Survey (BOS; <http://www.survey.bris.ac.uk/>). Participants were first required to provide demographic information and then respond to standardised measures regarding stalking attitudes and Facebook behaviours. Following this they were required to answer six free-text questions about their behaviour on Tinder and Facebook, some of which could resemble stalking-like behaviours. A pilot study tested for any errors in the online survey and indicated that it would take approximately 25-30 minutes to complete.

Ethical approval was sought from the Division of Psychiatry and Applied Psychology (DPAP) Ethics Committee of Nottingham University, reference number 226. The British Psychological Society's Ethics Guidelines for Internet Mediated Research (British Psychological Society, 2013) were adhered to.

Participants. For ANOVA repeated measures within-between factors, with 8 measures, based upon Cohen's (1988) recommendations for

a moderate effect size (0.15) and a $p = .05$ significance level, power analysis suggested a total minimum of 42 participants were required to achieve a power of 0.80.

Participants for this research were selected from the participant pool in Chapter 3 of the thesis. Study inclusion criteria were being over 18 years, fluency in English, having profiles on Tinder and Facebook either currently or in the past, having scored either above the 80th percentile (score 100 or above) or below the 20th percentile (score 61 or below) on the SRAQ, and providing informed consent. See Appendix N, Table A for overview of participants relevant for the study.

Sixty-nine participants were eligible for this research (27 Male, 42 Female). Age ranged from 18 to 47 years ($M = 24.60$, $SD = 4.65$). Participants reported their sexual orientation (87% Heterosexual, 2.9% Homosexual, 10.1% Other). Of the sample, 59.4% were White British, 17.4% were White European, and the remaining 23.2% were either: Black African, Mixed ethnic, Irish, East Asian, and Other. The mean years in education were 16.92 ($SD = 5.46$), which is the timewise equivalent of completing up to a degree at university. 11.6% ($N = 8$) of participants reported themselves to currently or in the past have suffered from a mental health issue, and 27.5% ($N = 19$) reported to have been a victim of stalking in the past.

Materials. This study was complementary to Chapter 3 of the thesis, and therefore, all of the materials remain the same aside from the free-text questions mentioned below.

Free-text questions. Six free-text questions were used to explore the reasons why individuals might search for ex-partners and/or specific individuals on Tinder and/or Facebook.

Q1. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with an ex-partner on Tinder and/or Facebook? (i.e., communicate with an ex)

Q2. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with an old friend you no longer have much contact with on Tinder and/or Facebook? (i.e., communicate with an old friend)

Q3. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with people you are not friends with 'offline' on Tinder and/or Facebook? (i.e., communicate with an online only friend)

Q4. Please explain in as much detail as possible the potential reasons why you communicate with people over Tinder and/or Facebook as opposed to face-to-face? (i.e., preferred online communication)

Q5. Please explain in as much detail as possible the potential reasons why you might stay 'online friends' with an ex-partner on Facebook? (i.e., stay online friends with an ex)

Q6. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with people who you are not romantically interested in on Tinder? (i.e., non-romantic communication on Tinder)

Data Analysis. Data were analysed using the Linguistic Inquiry and Word Count software program (LIWC; Pennebaker et al., 2015). The LIWC

word variables are research-based composites that have been converted to 100-point scales where 0 = very low along the dimension, and 100 = very high. The variable score represents a percentage of total words within the text provided. All punctuation-related variables were omitted from analyses, as we were interested in the extent to which LIWC could add to our understanding about individuals stalking attitudes and behaviours.

LIWC variables are organized such that there are two types of word variables: summary level and individual level. Summary level LIWC variables contain sets of individual LIWC variables. For example, the *social processes* summary level variable contains the individual level variables *family*, *friends*, and *humans*. The current research will use both summary and individual LIWC variables that best relate to stalking and social networking (note individual level variables will not be used if the summary level variable is being used and vice versa). Particular variables of interest for the current research are: *negative emotion* (e.g., hurt, ugly, nasty); *positive emotion* (e.g., love, nice, sweet); *insight* (e.g., think, know); *percept* (e.g., look, heard, feeling); *social processes* (e.g., mate, talk, they); *sexual* (e.g., horny, love, incest, sexual); *drives* (e.g., power, risk, reward, danger, take, and superior); and *leisure* (e.g., cook, chat, movie).

Mean scores were calculated for each of the Facebook behaviours and total SRAQ. All free-text questions were scored as either 1 = would (engage in the behaviour) or 0 = wouldn't (engage in the behaviour). See Appendix O for score guide. The cut off for pro-stalking attitude scores for the current data was those above the 80th percentile, which included 34 participants (16 males and 18 females). The cut off for particularly low stalking attitude scores were those below the 20th percentile and within this

range there were 35 participants (11 males and 24 females). These cut offs were determined by a histogram of the SRAQ data distribution which indicated that the majority of participants were clustered in-between the cut offs, and therefore the more extreme participants would be at either end of these.

Results

Data were analysed using SPSS 24.0 (SPSS Inc.), initially testing for reliability, normal distribution and missing data (See Appendix N, Table B). Although it was not theoretically appropriate to test for normality of word categories, for statistical purposes this was done. None of the LIWC variables were normally distributed, so non-parametric analyses were used where possible. The LIWC variable *sexual* was theoretically of interest for this research, but because it had so few data points for each question it was omitted from the analysis.

Mann-Whitney U tests were run to determine whether there were any differences in stalking attitude scores between those participants who would or wouldn't engage in the specific behaviours covered in the free-text questions. Analysis of variance (ANOVA) was used to analyse the word category output and stalking attitudes. Non-parametric correlations were also used to determine any association between Facebook behaviours and word category output.

As previously stated, the research had two main aims. The first was to explore why participants might practice various degrees of social surveillance online, and whether ultimately social-searching might be associated with stalking attitudes endorsement.

Comparisons between high and low SRAQ scorers. In order to test hypothesis one (H1) Mann-Whitney U tests compared high and low stalking attitude groups (see Table 3). This found that there were no significant differences in stalking attitude scores between those who would and wouldn't communicate with an ex-partner online (Q1), thus H1 was not supported. However, stalking attitude scores were significantly positively associated with whether one communicates online with someone they are not friends with offline (Q3). Also, for Tinder only, high endorsement of stalking attitudes was significantly associated with whether or not individuals communicate with people on Tinder they are not romantically interested in (Q6).

As the data did not support the expectations of H1, supplementary Mann-Whitney tests were conducted on all other free-text questions for further understanding of the behaviours and any possible association with stalking attitudes.

Table 1. Mann-Whitney U test for questions 1 to 6, difference in stalking attitudes.

	Wouldn't (N ₁)		Would (N ₂)		N ₁ , N ₂	U	Sig
	Mdn	SD	Mdn	SD			
Q1	102	48.93	61	35.17	11, 58	274.50	.47
Q2	59.50	36.42	100.00	37.74	61, 8	198.50	.39
Q3	55.50	30.41	105.50	36.75	22, 46	243.00	.001
Q4	57.50	36.62	102.00	37.21	16, 51	279.50	.06
Q5	61	37.84	61	37.74	9, 58	259.00	.97
Q6	59.50	33.45	106	37.76	34, 33	358.50	.01

Text analysis. The specific word categories of interest for this research were: *positive emotion, negative emotion, social processes, perception, insight, drives, sexual* and *leisure*. The number of words participants used in their response to each question varied (see Table 4).

The LIWC software calculated the percentage of words used per category, therefore considering the overall number of words each participant used in their responses.

Table 2. Mean word count and range for responses to Q1-6

	Mean (SD)	Min No. words	Max No. words
Q1	26.51(25.86)	2	177
Q2	17.29(13.42)	2	66
Q3	16(14.32)	1	69
Q4	23.32(27.25)	1	205
Q5	21.62(22.95)	1	124
Q6	10.39(13.56)	1	85

Table C (see Appendix N) displays the percentage of word categories for each question for those with high and low stalking attitude scores. In contrast to expectations, *sexual* words were the least prevalent word category used in the responses to each free-text question. As the frequency of *sexual* words was so low they were omitted from any statistical analyses. This finding meant that we were unable to answer research question two (RQ2).

ANOVA - Difference between word categories. In order to test the assumptions of hypothesis two (H2), a mixed analysis of variance (ANOVA) design was used with word categories (7 categories) as a within participant factor and stalking attitudes (low and high stalking attitude groups) and gender (male or female) as between participant factors, for all free-text questions. The results indicated there was a significant main effect of word category for each of the free-text questions (see Table 5). However, there were no interaction effects between word category and both stalking

attitudes or gender. This suggests that there were no significant differences in word categories when comparing for high and low stalking attitudes, thus rejecting H2.

Using follow up independent samples t-test with bootstrapping, the results showed that on average, mostly participants with high stalking attitudes did not use any specific word category significantly more than those with low stalking attitudes for each question one through to six (see Appendix N Tables E1 to E6). The exceptions to this were: for Q2 participants with high stalking attitudes used more *positive emotion* words ($M = 2.44$, $SD = 3.72$, 95% CI for mean difference was $[-3.17, -0.35]$ $p < .05$), for Q4 participants with high stalking attitudes used more words related to *insight* ($M = 1.45$, $SD = 2.35$, 95% CI for mean difference was $[-6.76, -0.46]$ $p < .05$) but less words related to *social processes* ($M = 16.12$, $SD = 9.47$, 95% CI for mean difference was $[0.06, 8.51]$ $p < .05$) and for Q6 participants with high stalking attitudes used more words related *drives* ($M = 2.67$, $SD = 5.12$, 95% CI for mean difference was $[-6.93, -0.48]$ $p < .05$). Overall, these findings were complimentary to the mixed ANOVA findings which indicated no interaction effect between word category and stalking attitudes for questions one through six.

Table 3. ANOVA for differences between word categories.

		F	df1, df2	Sig (p)	partial η^2
Q1	Word category	74.92	2.74, 183.60	<.001	.53
Q2	Word category	52.03	3.63, 242.85	<.001	.44
Q3	Word category	39.81	3.66, 246.71	<.001	.37
Q4	Word category	39.03	3.34, 223.98	<.001	.37
Q5	Word category	56.64	2.97, 198.72	<.001	.46
Q6	Word category	4.69	3.81, 255.11	<.001	.07

Sidak's post-hoc analysis was used to test the assumptions of hypothesis three (H3). This indicated that there was a significant difference between the percentage of *social processes* words and all the other word categories except *drives* for Q2 ($M = 13.70$, $SE = 1.03$, $p < .0001$); and there was a significant difference between the percentage of *social processes* words and all the other word categories for Q3 ($M = 15.44$, $SE = 1.37$, $p < .0001$) and Q4 ($M = 13.92$, $SE = 1.06$, $p < .0001$). As a result, those data partially support H3.

Sidak's post-hoc analysis was also run for questions one, five and six to develop understanding about individuals' explanations for staying online friends with, or communicating with, an ex-intimate (RQ1), and also to discern whether these behaviours demonstrated different patterns of word category relationships to what was found above. This revealed that there was a significant difference between the percentage of *social processes* words and all the other word categories for Q1 ($M = 16.03$, $SE = 1.14$, $p < .0001$) and Q5 ($M = 14.70$, $SE = 1.24$, $p < .0001$). For Q6, the only word categories which had significant differences with *social processes* ($M = 6.62$,

$SE = 1.18$) were *percept* ($p < .0001$) and *leisure* ($p < .02$). For all questions, *social processes* words were significantly higher than the other noted word categories. See Appendix N Table D1 to D6 for Sidak's post-hoc analysis on word category differences for all free-text questions with *social processes*.

Correlation analysis. In order to test the assumptions of hypothesis four, that individuals who have high scores for each of the three Facebook behaviours (covert provocation, public harassment and venting) will use a higher percentage of *negative emotion* words in their responses to free-text questions regarding an ex-partner (Q1 and Q5), Spearman's correlation was used.

Table 4. Spearman's Rho correlation

		Covert provocation. ($p =$)	Public harassment. ($p =$)	Venting. ($p =$)
Q1	Negative emotion	.08 (.25)	-.12 (.16)	-.09 (.23)
Q5	Negative emotion	-.00 (.49)	-.16 (.10)	-.11 (.20)

For question one, there were no significant correlation between *negative emotion* word use and covert provocation, public harassment or venting. Similarly, for question five there were no significant correlations between *negative emotion* word use and covert provocation, public harassment or venting. Thus, hypothesis four was not supported.

Discussion

The present study sought to: a) assess the reasons that people gave for possibly engaging in stalking-like behaviours online, and b) investigate whether those reasons were related to respondents' attitudes about

stalking. In order to assess people's reasons, a text analysis categorised the words used within individuals' free-text responses, of which eight categories were of interest for the current research. Important to note when interpreting these results is that the data reflect what participants say they do, and not necessarily what they actually do. In addition, these data are cross-sectional, and thus they do not indicate that higher levels of stalking attitudes may cause stalking perpetration on SNSs.

Hypothesis one. Hypothesis one was not supported; there were no significant differences in stalking attitude scores found between those who would and wouldn't search for and communicate with an ex-partner. Although it is widely agreed that individuals are more likely to be stalked by an ex-partner (Duff & Scott, 2013; Farnham et al., 2000; Morewitz, 2003), based on the current findings, it is possible that some ex-partners are being miss-categorised as stalkers, when their behaviour is about something else. It is possible that after a relationship ends, an ex-partner might become curious as to how the other is coping or progressing with life. This could be because curiosity can relieve uncertainty (Litman & Pezzo, 2005), including after a relationship break up (Slotter, Gardner & Finkle, 2009). It has also been found that difficulty adjusting to a breakup commonly manifests as post-relationship contact and tracking (PRCT; Lee & O'Sullivan, 2014), and this may not necessarily be malicious or best defined as stalking.

A relationship break-up can be a highly distressing (Cutler, Glaeser & Norberg, 2001), traumatic event for many, and the plethora of emotions that often follow are notoriously difficult to manage (Vandervoort & Rokach, 2003). These feelings might be stronger for those who have been in a long-

term relationship, making cutting all ties with an ex-partner more difficult (Simpson, 1987; Rhoades, Kamp Dush, Atkins, Stanley & Markman, 2011). In addition, the routines, habits and mental representations that one forms in a relationship may also take time to unlearn, and thus make the process of cutting ties much harder (Agnew, Van Lange, Rusbult & Langston, 1998). Furthermore, it is likely that ex-partners share similar interests or friendship groups, which further complicates the separation and blurs the boundaries in regard to unwanted pursuit and contact. All these factors should be considered in the context of ex-partner stalking in order to better understand the phenomena.

It matters whether a person's behaviour is about something other than stalking even when it resembles stalking, as it impacts how professionals and victims might assess risk and what kind of support or intervention is offered. Furthermore, it might impact legislation by including in its definition both victim distress and perpetrator motivation, though victim distress should still be recognised as more important than possible perpetrator motivation.

However, although the current research has evidenced that communicating with an ex-partner online might not be associated with stalking attitudes, social desirability is important to consider when interpreting these data, as participants may engage in either (or both) self-deception and impression management. Additionally, one should consider to what extent people are able and willing to be accurate in their descriptions of their online behaviour.

Despite the above finding not having statistical significance, stalking attitude scores were significantly positively associated when participants

reported to communicate online with people they are not offline friends with, and/or those on Tinder they are not romantically interested in. These findings indicate a stranger-stalker context. This, despite not being in line with the general literature, which indicates ex-partner stalking is most common, is complimentary to the findings of the Electronic Communication Harassment Observation (ECHO). ECHO found that perpetrators were more likely to be a complete stranger or a casual acquaintance than a former partner (Maple, Short & Brown, 2011).

Individuals who report communicating online with people they are not offline friends with are likely to spend more time online, and possibly struggle to form real relationships (e.g., because they may be shy; Baker & Oswald, 2010; McKenna, Green & Gleason, 2002). Increased time spent online can cause one to lose touch with aspects of reality and find it harder to form in-person relationships, meaning they could become more invested and fixated with online relationships (Short & Barnes, 2017). For these people, it is possible they have normalized stalking behaviours, which may be reflected by higher endorsement of stalking attitudes. Therefore, future research on this group of individuals should be conducted regarding their propensity for actually engaging in stalking behaviours.

For individuals who report using Tinder to communicate with people they are not romantically interested in, this raises the question of what they are using it for. Future research should consider a qualitative investigation of these specific data to discern whether people's explanations for engaging in such behaviour are associated with stalking. It is plausible Tinder might facilitate stalking, given it links with Facebook, and that its geolocation function tells you how near you are to your match up to a 100ft radius.

These features could potentially facilitate such behaviours (Carman & Choo, 2017; Seward, 2013; Summers, 2014).

Hypothesis two. The results indicated significant differences between word categories for each question. However, there were no significant differences when comparing for high and low stalking attitude groups, thus rejecting the assumptions of hypothesis two, that higher *negative emotion*, and *drives* words would be significantly positively correlated with higher endorsement of stalking attitudes. In addition, the results found no gender differences between word categories used, which is contrary to the historic understanding of gender differences in language use (Xia, 2013). However, it is possible that gender differences in the use of emotional words are clouded by the nature of computer mediated communication which promotes abbreviation, contraction, and structural reduction of language (Naveed, 2014) and could also be confounded by mood state (Greifeneder, Bless & Pham, 2010).

Further, these non-significant findings could be impacted by the low word count of participant responses, meaning it was difficult to detect robust differences between categories. However, it is most likely that the language used to describe what one may do or has done is different to the language used when one actually acts. Therefore, it might be limiting to only focus on language used rather than trying to capture intention and motivation. Unfortunately, using word categories to distil intention and motivation is not ideal. This is possibly a limitation of the data as we do not know how able people are to construct explanations about their motivations, providing coherent narratives without preconceived notions of themselves and others. However, it is also a shortcoming of LIWC for this

research purpose. Although the finding that text analysis is a limiting research method was important and useful for the investigation of language regarding possible stalking behaviours, it does not do justice to the data collated. As a result, Part 2 of this paper conducts a thematic analysis on the free-text question data.

Hypothesis three. Hypothesis three was confirmed by the data, which found that there were significant differences between the percentage of *social processes* words and all the other word categories for question three and four, and (except *drives*) for question two. These questions were related to behaviours such as contacting an old friend online, communicating online as opposed to face-to-face and communicating with people who you are not friends with "offline". These behaviours are cited as general uses of Facebook (Papacharissi & Mendelson, 2011; Shen & Williams, 2011), and therefore it was expected that people would report doing these for social purposes. However, to infer any more detail about this finding, future research assessing the context in which the words were used is required to discern whether these behaviours are a true reflection of social-cultural Facebook norms.

The same analysis was also run for question one, five and six to develop understanding also about individuals' explanations for staying online friends with, or communicating with an ex-intimate, and also to discern whether these behaviours demonstrated different patterns of word category relationships to what was found above. This revealed that there was a significant difference between the percentage of *social processes* words and all the other word categories for staying online friends with, or communicating with, an ex-intimate (Q1). For communication with people

you're not romantically interested in on Tinder (Q6), the only word categories which had significant differences with *social processes* were *percept* and *leisure*.

These findings raise important questions regarding the six free-text questions. It is possible that the behaviours depicted in these questions were all tapping into similar types of social behaviours unrelated to stalking, and therefore the questions need to be more definitive in future research. Or it could be that *social processes* words might not signify only general SNS use, because the context in which they are used may be important in terms of differentiating behaviours. Unfortunately, with looking at responses in terms of word categories used, this does not allow us to differentiate between different uses of *social processes* words.

Hypothesis four. Hypothesis four was not supported by the data, as none of the three Facebook behaviours (covert provocation, public harassment and venting) demonstrated a significant positive correlation with higher use of *negative emotion* words in responses to free-text questions regarding an ex-partner. It is possible that a certain degree of social surveillance is an expected and general capability of Facebook (boyd & Ellison, 2007; Tokunaga, 2011), and therefore participants did not perceive this to be negative or to cause negative affect. It is also likely that the Facebook behaviours captured in the Facebook questionnaire did not meet a threshold for people to perceive it as stalking, and therefore, it may indicate that cyberstalking comprises darker behaviours, such as creating private accounts to contact a victim.

Further, Fox and Anderegg (2014) have stated that individuals' perception of normative information seeking online about a potential or

current romantic partner reportedly changed as relationships progressed. It is, therefore, possible that the questions regarding online behaviours towards an ex-partner were too broad to capture detail about stalking-like behaviours, and future research should specify more detail about the (ex)relationship context to better understand possible stalking associated with it.

Future research

As can be seen from the above findings, using word categories to try to distil motivation is likely not refined enough to be useful at present. As a result, further research might use qualitative research methods of analysing the free-text response in order to explore the context in which the word categories are being used; for example, whether the social process categories really do tap into pro-social motivations for using SNSs. In addition, future research should consider interviewing people regarding why they engage in certain behaviours on SNSs, as this will likely produce data which is richer in terms of motivation and attitudes, as opposed to the free-text method, which did not yield plentiful data on such aspects.

Although Chapter 3 of this thesis found that being male was a significant predictor of stalking attitudes, it is possible that, particularly when examining behaviour and language in an online context, gender differences disappear. This could be due to the configuration of SNS's altering the way people communicate, and also due to online platforms requiring minimal effort and maximal anonymity (Finn, 2004; McGrath & Casey, 2002) meaning social-cultural norms are less prominent. Based on this, future research should analyse gender in more depth when investigating cyberstalking and cyber communication.

With the growing popularity of SNSs such as Twitter and Instagram (Pew Research Internet Project, 2013), future research should also consider investigating these in the context of stalking to broaden our understanding. In addition, research would benefit from a focus on specific SNSs, as it has been found that differences in SNS usage might be undetectable when data from different sites are combined (Hargittai, 2008), as was the case for understanding the development of SNS addiction (Ryan, Chester, Reece & Xenos, 2014). As the current research focussed on Tinder and Facebook, this is a limitation.

Implications

A number of implications are apparent from the data for future iterations of Tinder and Facebook architecture. Tinder does not currently allow users to activate an account without authenticating via a Facebook account. However, with Facebook possessing so much personal information, omitting the Facebook authentication requirement, while still cross-checking the identity of a Tinder user, would be ideal. However, because a Facebook account is still required to create a Tinder account, Tinder should consider alerting users when configuring their profile to be aware of their Facebook privacy settings. This is particularly important considering Tinder users' privacy concerns were mostly related to institutional issues, such as Tinder selling data to third parties, rather than social privacy concerns like stalking (Lutz & Ranzini, 2017).

Further, the geolocation calculations and information regarding the proximity of Tinder matches is something that users should not be able to readily access, or users can opt-out of. Rather, it should go on behind the scenes, based on user set parameters. Regarding Facebook, it might be

beneficial to include a function activated whenever a person accepts or adds a new friend, confirming that they know the person. If they do not confirm this, then an automated message can advise against stalking related behaviours to raise awareness.

Limitations

There are a number of limitations mentioned already, such as the difficulties with using word categories to distil motivation and intention and the grouping of Tinder and Facebook data. Other limitations include that the free-text questions were placed at the end of the online survey and therefore participants could have experienced a fatigue effect when they came to these questions and, as a result, responses were limited in detail. Some participant responses were as small as one or two words, which limited the analysis potential. However, low unit response and item nonresponse (Fricker & Schonlau, 2002), as well as missing data and non-specific responses (Manfreda, Hlebec & Vehovar, 2003) are reported as frequent limitations of open-ended questions.

In regard to the scoring of the free-text data for whether participant responses indicated they would or would not engage in the behaviour, there is a possibility of scoring errors and bias, and for that reason an independent researcher scored 20% of the data to reduce this possible error. Another limitation is regarding the possibility of the LIWC software miss-coding words. However, small classification errors were deemed to rarely impact the conclusions drawn from the results, because they are offset by the way that words are most commonly used by people (Pennebaker et al., 2015).

Conclusion

The results of this study indicate that stalking attitude scores are not differentiated based on whether respondents communicate with an ex-partner online. However, for individuals who reported communicating online with people they are not offline friends with, and for those who reported that they would communicate with Tinder matches who they were not romantically interested in, stalking attitudes were significantly higher. The results also indicated that, although there were no significant word category differences between high and low stalking attitudes, social process words were used significantly more across participant responses.

This research challenges our assumptions of ex-partner stalking and whether there are other, more appropriate explanations for people's behaviour in this context. For example, more pro-social explanations include the trauma of a relationship ending, whereby individuals may struggle to move on, or scenarios wherein individuals remain friends due to shared friends and interests. Unfortunately, the conclusions which could be drawn from the data regarding *social processes* words were limited by the research's use of word categories, as they did not capture context. Therefore, future research using qualitative methods on the data would be needed to extend learning.

Part 2

Aim

Part 2 of this research aims to further understand individuals' reasons for searching or communicating with an ex-partner on Tinder and/or Facebook, as well as why individuals might communicate with others they were not romantically interested in on Tinder. The reason for doing this is

to enrich and complement the LIWC analysis and also to discern whether there were any pathological or stalking related themes that were lost within the quantitative analysis.

Research Questions

Through using a qualitative approach to analyse individuals' discourse regarding their use of Tinder and/or Facebook:

RQ1: What does language reveal about individual explanations for searching for or communicating with an ex-intimate on the platforms?

RQ2: What does language reveal about individual explanations for non-romantic Tinder communication?

Methods

Epistemology. This research takes a social constructionist epistemology which assumes that knowledge is constructed by people within dialogue (Harper, 2011). It sees language, communication and speech as having a central role in the interactive processes with which we understand the world and ourselves (Burr, 2003). Therefore, the analysis of language and other symbolic forms is at the heart of social constructionist research methods, and this is why the current research uses a social constructionist thematic analysis (Braun & Clarke, 2006; 2012). Adopting this stance allows for curiosity regarding how participants rationalise why they might engage in certain forms of behaviour which can shift into what becomes termed online stalking.

Reflexivity. Social constructionism argues that true objectivity is absent in the human experience because all methods require subjective humans to rate other subjective humans. Therefore, it is important to acknowledge that no researcher can be a neutral observer (Silverman,

1997). The researcher influences and shapes the research process both personally and as theorist/thinker (Willig, 2013). The nature of reflexivity as Polanyi (1966; 1962) highlights, requires thinking about what exists beneath the conscious self to think about individual schemas of perception and what underpins them. It requires thinking about what appears normative to then look at how it can be viewed alternatively to make sense of it, such as reflecting upon polarities and working through antinomies.

For example, this led me to position myself in terms of my gender as a woman who is also training to become a forensic psychologist. Working with both men and women within the research I had to think about my own ordinary concepts and ways of understanding the world in relation to the men and women within the research to see if there are other ways of making sense of their way of seeing the world.

My own interests in stalking research will also have impacted the process. This was a benefit in leading me to focus upon the topic, but I also had to think about the frames of the participants rather than impose academic concepts upon them and drown their perception. This was a tricky process as I had already undertaken an empirical project and reflecting on the voices brought up numerous issues around how the two forms of research related and diverged, thereby providing me with some challenges in how I interpreted them. I managed this challenge by ensuring I did not engage with the quantitative research for a month prior to doing the qualitative analysis. This meant that the research ideas/findings were not in the forefront of my mind and I was better able to think about the frames of the participants. I also did not read any literature while conducting the analysis.

Procedure. The data were collated via an online survey which asked participants six questions about their online behaviour. Two of these questions (detailed below) were specifically related to behaviours which could possibly contribute to stalking and thus will be used in the thematic analysis. The current data set includes 69 participants who scored above or below pre-determined stalking attitude scores taken from a data corpus of 173 participants.

Q1. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with an ex-partner on Tinder and/or Facebook? (i.e., communicate with an ex)

Q6. Please explain in as much detail as possible the potential reasons why you might search for and/or communicate with people who you are not romantically interested in on Tinder? (i.e., non-romantic communication on Tinder)

This approach to analysis was an inductive ideographic socially constructed thematic analysis following Braun and Clarke's (2006) six phases when undertaking an analysis (See appendix S for step-by-step details of the undertaken process). The analysis was inductive, meaning that in order to generate codes and themes, there was a read and re-reading process. This also meant that I had to set my prior conceptual knowledge aside as I was focusing on whether the participants' lived experiences produced other insights. As discussed already, this was a challenge and something that I had to frequently pause to reflect on.

Another challenge I faced was that after undertaking the empirical work I had organized the data set into categories such as: Male High SAQ (stalking attitude score), Male Low SAQ, Female High SAQ, and Female Low SAQ. These were potentially deductive frames that could be imposed upon the data, shaping my perception of the participants. I then had to decide how they fitted into the themes moving beyond the deductive frame that already existed into a humanistic understanding of how each participant made sense of their ecological environment (Bronfenbrenner, 1979). A humanistic perspective is interested in the point of view of the individual's subjective experience in order to gain better insight into the individual's behaviour.

Whilst the empirical data produced a frame for making sense of the data, this had to be set aside to then make sense of the participants' experiences. As a result, the data set was coded first at the semantic level, where I was engaged in mirroring and paraphrasing a chunk of responses in order to organise the data into meaningful groups (Tuckett, 2005). Next, I coded at the latent level, which requires finding deeper meanings in the participants' response. During this process, attention was also paid to the identification of new codes looking first at a semantic and then latent analysis of the data, requiring interpretation and reflection upon the self.

Themes were then deduced from the codes and data items, and these were grouped together in order to find an overarching theme, all the while constantly checking for emerging patterns, variability and consistency (See Table 5 below for an exemplar of the coding and thematic process). The interpretation of themes and sub-themes was conducted by a process of reading and re-reading before eventually undertaking a further reflection

on how the themes related to one another and how they connected to the relevant literature (See appendix T for thematic maps of the relationships between themes and sub-themes.).

Table 5. Snapshot example of the coding process for Q1 male low stalking attitudes score responses.

Participant response - <i>Male Low SAQ</i>	Coding semantic	Coding latent	Themes
(P 19) To stay in contact/see what they are doing especially in a situation where you won't see the person again just in passing	Staying in contact where you won't see them in passing	Not in physical contact or live far apart – ghost or a shadow of the past –info seeking - want to maintain contact, might not want to move on.	Moving on Benchmarking
(P 21) To see how they're doing. Particularly if a recent message or encounter with them reminded me of them. Or if they come up on my news feed, out of interest.	See how they are doing. If there is a prompt	Possibly positive memories, stimulus prompts the behaviour, or curiosity - Info seeking. Aspects of the platform facilitate the behaviour	Benchmarking Moving on
(P 45) Tinder: Search for: I wouldn't. Tinder: Communicate: To get them back. (If matched). Facebook: Search: To see if I am doing better / having more fun / if they are with their new partner. Facebook: Communicate: Most likely wouldn't, unless I was friends with them and was seeing how they are doing or was visiting their city and wanted to say hello.	Would not search on Tinder but would communicate to get them back. Facebook searching for benchmarking and seeing how they are getting on. Positive. But not communicating unless visiting city.	Tinder taboo. Duality – of not searching but desire to get them back or win their affection. Idea of supremacy to make themselves feel better. Facebook – duality of searching and not communicating. There is the idea of visiting to say hello when superior.	Deciding how to engage Moving on Benchmarking – Positive Social game playing
(P 63) The only reason I would search for an ex-partner on Facebook	Information sharing	Negative communication – ideas of shaming, stigma and blame –	Social game playing Moving on

would be to inform them of something critically important such as an STI. I would never search for an ex-partner on Tinder.	Definitive and emphatic negation	I am a victim of your infidelity or you are a victim of mine. Power play. Complete erasure. Tinder taboo.	Deciding how to engage
(P 90) Trying to meet new people from a broader social circle.	Meeting new friends.	Possible sense of isolation, loneliness, social inadequacy - social strategy.	Moving on. Social game playing
(P 91) If you ended on reasonably amicable terms and were trying to stay friends (Facebook). Re: Tinder you can't really search actively	Keeping the contact alive. Tinder – limitations	Ending on good terms means it's okay to stay friends. Adult - genuine communication. Tinder taboo.	Moving on Deciding how to engage
(P 95) On Facebook: I communicate primarily because I'm still friends with almost all of my exes.	Still friends with ex's on Facebook.	If you're still friends with ex's it's okay to communicate. Positives. Adult concept.	Moving on
(P 105) Because we have an on-going friendship. Facebook is only one platform of communication and I'd more than likely use Whatsapp.	Still have friendship.	If you're still friends with ex's it's okay to communicate. Distinctions between social networking platforms – adult concept.	Moving on Deciding how to engage
(P 114) To see what's changed in their life and if they had a new partner.	Gain insight into their lifestyle.	Benchmarking – positive. But might also mean they want to re-establish romance.	Moving on Benchmarking - positive
(P 127) Nostalgia and curiosity to see how they have progressed, especially romantically, but only on Facebook. I would not use Tinder to contact an ex.	Benchmarking. Distinction between Facebook and Tinder for communication. Emphatic no.	Benchmarking - Positive Distinctions between platforms. Tinder is taboo	Moving on Benchmarking - positive Deciding how to engage
(P 149) Mostly ended on good terms, and still remain	Relationship still on friendly terms.	Adult concept. If you're still friends with ex's it's okay to communicate.	Moving on

reasonably friendly / civil to each other.			
(P 153) Because we have decided to be friends so we keep communicating, or several years have passed since we last had contact and I want to catch up a bit on how their life turned out since last. On both occasions I would message them, but if they do not respond I will accept this as them not wanting any contact.	Still friends. Years have gone by. Messaging and response – respecting boundaries	Adult relationship rather than looking at superiority. If you're still friends with ex's it's okay to communicate. Some positive benchmarking Adult concept and behaviour.	Moving on
(P 162) I wouldn't	Wouldn't contact via Tinder.	Emphatic in stating not contacting on Tinder – taboo.	Deciding how to engage

Results

The data set for this analysis were the responses participants provided to two open-ended questions in an online survey. This is why the data were analysed drawing on a social constructionist thematic analysis (Braun & Clarke, 2006; 2012). In following the methods provided by Braun and Clarke, an overarching theme and sub-themes were identified for both Q1 and Q6 (See Table 6). Direct quotes from the data were then grouped under the thematic headings to provide a clear illustration of each theme. Pyett (2003) argues that merely “counting responses misses the point of qualitative research” (p. 1174) and thus this research does not report the frequencies of each theme and instead presents and discusses themes in order to tell a meaningful story, as detailed by Braun and Clarke (2006).

From the analysis, one overarching theme related to the ecological environment (Bronfenbrenner, 1979) of Facebook and Tinder emerged with sub-themes also generated. These shaped how individuals interacted within

the frame (Goffman 1974). These themes represented the various socially constructed ways (Burr, 2013) individuals in their accounts made sense of ways of interacting within the environments. There were a set of informal rules that are generated tacitly (Polanyi, 1966) through forms of intuition and formal communication to understand the rules of each environment and how to deploy them. There is a certain amount of testing the nature of these rules, as they are always in transition.

Table 6. Description of themes for Q1 and Q6

Theme Q1	Sub-Themes	Meaning
Ecological rules for communication with an ex	Deciding how to engage	<p>A common theme throughout participant responses was regarding how they would engage in searching or communicating with an ex-partner. There were some individuals who decided not to engage in the behaviour at all on either platforms and simply stated "I wouldn't" in response to Q1 (e.g., participant 162). However, generally, there was a distinction between engaging in the behaviours on Facebook as opposed to Tinder. Participant 148 stated "I wouldn't do it on Tinder though - just FB", demarcating a distinction between the two social media platforms for this individual. Other participants were emphatic in statements regarding not engaging in such behaviours on Tinder for example, participant 63 said "I would never search for an ex-partner on Tinder".</p> <p>Facebook, on the other hand, was viewed as being neutral and therefore more acceptable to engage with an ex-partner over. For example, participant 14 stated Facebook was "a neutral place to communicate: less invasive than a direct text..." This perception highlights that Facebook offers a distinct space for communication considered as appropriate for communicating with an ex-partner, as it allows one to easily "pass on information" according to participant 9.</p>
	Care and Concern	<p>In each of the perceptions the role of care and concern arose as a major theme for maintaining contact. With Tinder and Facebook differentiated, participant 21 revealed they would search for or contact an ex-partner "To see how they're doing" if prompted by "a recent message or encounter that reminded me of them". This idea of seeing how they were doing was motivated by a prompt and "nostalgia" to gain insight as part of a "concern" according to participant 64. These appear as adult relationship concepts. This was further highlighted by participant 58 who stated "especially if there wasn't any bad blood between us". It was also perceived as a "friendly gesture" by participant 35, whereby "if you're over the person...then it's fine to get a sense of what they're up to" (participant 14).</p> <p>This prompted participant 134 for example "to reconnect" whilst participant 69 revealed that she was "...still friends and I still care for him". However, this "depends how the relationship ended" as noted by participant 145. For example, participant 40 said "we split on good terms and decided to stay friends" or "to make up or re-engage friendship" as noted by participant 42. For those who "mostly ended on good terms,</p>

and still remain reasonably friendly” as stated by participant 149, they communicated because “if it is someone you really loved for or cared about then it seems unnatural to cut all contact” as highlighted by participant 37. Throughout the responses captured by this theme there is a reference to becoming friends rather than lovers to still maintain contact signalling care and concern without it becoming sexualised.

Benchmarking

In addition to care and concern, benchmarking also arose based upon a certain element of calculation where individuals were motivated “to see if I am doing better” as relayed by participant 45 or “to see how badly they are doing without you” as noted by participant 38. There is a suggestion of wishing to feel superior and a potential loss of self-esteem. This appeared to be connected to how the relationship ended. This type of benchmarking appeared negative and to be linked to a difficult ending to the relationship, as participant 15 stated they were “no longer on speaking terms” with an ex. This dynamic was also highlighted by participant 73 who stated “if they are not doing well [it] might bring a bit of satisfaction if it ended badly or sadness if it ended mutually”.

In some instances, benchmarking was neutral and was an extension of expressing care and concern for an ex-partner, for example, participant 19 stated they would “stay in contact/see what they are doing, especially in a situation where you won't see the person again” and participant 21 said they like “to see how they're doing”.

Meanwhile, another dynamic arose as outlined by participant 146: “I would not communicate with them, but I might search for them to see how they are”. This suggests that searching is possibly viewed as less intrusive than direct communication and more acceptable within the social milieu as there is no direct disruption. Social searching is a principle feature of SNS's and therefore this is part of the overall dynamic of being on the platforms.

Moving on

Whilst care and concern was one motivation and another component concerned benchmarking, which entailed direct communication and looking at what they were doing, another dynamic arose. This entailed communicating to “...clear the air if there was any tension between us two” as noted by participant 28. Similarly, participant 126 stated that communication offered them “closure”, which is part of the process of moving on. Likewise, participant 4 extended this concept by stating that “Facebook is the bridge to life after closure”, which indicated that once a relationship has ended; emotional closure could be gained via certain

behaviours on Facebook. Facebook seemingly facilitates platonic relationships to allow closure and hold memories of the past. Participant 83 pointed this out by outlining that when they were "missing them" they would "look back at memories".

In contrast participant 52 stated this allowed them "to argue about the break-up". Another participant (43) wanted to "...get stuff back. Give back his shit & presents I no longer want", thereby continuing the conflict and likely hindering moving on.

Whilst closure was one rationale and hindering the moving on process was another, some individuals utilised these platforms to rekindle a relationship as revealed by participant 78: "to see if there was a chance of getting back together, and of reigniting the romance." This was echoed by participant 41 who said they "...still had very strong feelings for them and missed their company..." which would lead to them rekindling the romance "if I knew they were single".

Social game playing

Participant 90 stated they were: "trying to meet new people from a broader social circle" and this was suggestive of a strategy to enhance their social network because they wanted to meet people "after university and not just on a drunken night out" as stated by participant 17. This type of social game playing on Facebook facilitates a form of social communication and is perceived as a desirable aspect of the platform. Another desirable aspect is that it's "time saving - don't have to physically go out" noted by participant 43. Individuals used social strategies on Facebook and/or Tinder for "easy sexual hook-ups" as noted by participant 15. Participant 171 also reported that they engaged in the behaviour as a strategy for "sex" or "fun" when one is "bored or horny".

Other participants reportedly used more manipulative social strategies with an ex-partner such as: trying to "get back in contact as a coincidence" as noted by participant 16; or as a way of rekindling romance by "[faking] an accidental message to another person in order to spark up a conversation" as outlined by participant 18; or getting back in contact by "coincidence" as reported by participant 31; or "[messaging] them and [liking] their posts to try and gain their attention again" as outlined by participant 23. These types of strategies entail being involved within the subtleties of a game of enticement. However, in contrast, participant 153 stated: "on occasions I would message them, but if they do not respond I will accept this as them not wanting any contact", which presents as a more adult concept of communication.

Other forms of game play in communication involved the use of power such as “[rubbing] your new relationship in their face...” as noted by participant 19 or “to inform them of something critically important such as an STI” as declared by participant 63, possibly becoming a form of revenge. There is a strong element of shaming, stigma and blame in this form of communication. It is where the issue of power and self-esteem arises in the quote: “probably some sort of self-appreciation gained from flirty talk” (participant 75) where the individual enhances their prowess as a result of engaging in flirting with an ex-partner.

Theme Q6	Sub-Themes	Meanings
Ecological rules for non-romantic communication on Tinder	Deciding how to engage	A common theme throughout participant responses was regarding whether they would engage in communication on Tinder with someone not of romantic interest. Participant 45 indicated that using Tinder to communicate for anything other than a meeting which potentially produces a romantic or sexual encounter is seen as problematic: “I wouldn’t”. As participant 63 explained: “I would not want to waste my time or theirs”, something echoed by participant 133: “I wouldn’t, it’s a waste of time”. In addition, participant 14 notes “That’s misleading and potentially inconsiderate”. This suggests that these individuals are likely to be using Tinder for meeting a romantic partner and have more mature concepts of relationship behaviour. However, for many individuals, they did decide to engage in the behaviour and their reasons for doing so were related to curiosity or entertainment.
	Curiosity	<p>A level of curiosity motivates people to use Tinder to connect with people and once interest is established, the next stage is communication. Participant 14 stated “I wouldn’t know if I wasn’t romantically interested in someone unless I communicated with them”. Participant 9 stated: “If the person looks particularly interesting” they would be motivated to contact them whilst participant 41 stated they wanted “to find out something interesting about them”.</p> <p>It appeared that the forms of communication held the expectations that it would either lead to a brief sexual encounter or a longer-term relationship. Participant 33 indicated that they were motivated to use Tinder to form romantic or friendship connections, as they stated they were communicating “to try to move on from my last relationship and also to talk to new people”; participant 6 said they wanted “to become romantically acquainted”; participant 58 said they like “to see if they have a good personality and if we could</p>

be friends”; and participant 73 said they were curious about “[becoming] romantically acquainted”. Each of these responses have a common motivation of curiosity about relational opportunities and were made by female participants. However, male responses indicated they were more likely to use Tinder to fulfil casual sex needs, such as for “short term interests, one-night stands” as declared by participant 40 and “unromantically fucking randoms”, revealed by participant 101 and thus their engagement in the behaviour likely stemmed from a curiosity about the casual sex opportunities.

Entertainment

There appeared to be a range of entertainment needs which communication on Tinder with someone not of romantic interest fulfills, such as “for fun” (participant 149), “for company and conversation” (participant 15), “to make friends” (participant 25) or as participant 67 and 120 stated “to get more attention” and “to have a social life and not be bored”.

There is a duality, with a requirement for excitement and “attention” whilst also relieving loneliness and boredom. Tinder provides a remedy due to its abundance of members and instant messaging features. The level of engagement however changes contextually as participant 127 stated: “I wouldn't [communicate with a non-romantic interest] unless I matched a friend as a joke. Just for fun.” He highlights that Tinder differs from Facebook as there is a sense of game playing for “amusement” where a “joke” can be played on the other person, highlighting a potential lack of care of the consequences played upon a stranger on Tinder. This also suggests that Tinder is less regulated, as people misuse it beyond its purpose of online dating.

Male responses identified a need for “sex” (participant 171) via “one-night stands” (participant 15) or “fucking randoms” (participant 9) something participant 8 explained as “just for a laugh”. These were coded at operating on a different level of engagement based more on an intrapersonal need without considering the other person in contrast to an interpersonal requirement based on “investing romantically”, as outlined by participant 101.

Communicating on Tinder for these purposes also reportedly meant there was “less chance of embarrassment” as detailed by participant 13, particularly for people who “have trouble talking to new people and pursuing a romantic relationship...” as stated by participant 16. This suggests that Tinder is also a platform for those who have issues with shyness and self-confidence.

Discussion

This research examined rationales for searching or communicating with an ex-partner on Tinder and/or Facebook and why some Tinder users communicate with people they are not romantically interested in. This investigation used a social constructionist thematic analysis (Braun & Clarke, 2006; 2012). It identified one overarching theme related to the ecological environment (Bronfenbrenner, 1979) which participants operated in, where the macro-environment is cyberspace.

This overall macro-world (cyberspace) could also be split into exo-systems of Tinder and Facebook. In these ecological environments there were socially constructed rules of engagement (Burr, 2013) which highlighted the need for different forms of interaction in two spheres of behaviour: Facebook for ex-partner communication and non-romantic Tinder communication. From reflecting on the responses that were made, a series of sub-themes emerged. These reflected a set of informal rules that were tacitly generated (Polanyi, 1966). It is through understanding the various hidden rules which emerge from forms of intuition along with testing these out within formal communication that individuals can learn how to interact.

Communicating with an ex-partner on Tinder/Facebook.

Initially, there was a decision around "how to engage". When referring to communicating with an ex-partner, Tinder was taboo, whilst Facebook was seen as acceptable. There were some distinctions between searching and communicating, with searching being permissible, as it is less intrusive and part of the general capability of Facebook (Boyd & Ellison, 2007; Tokunaga, 2011).

Overall, this sub-theme suggests a self-regulation is taking place on Facebook, which seemingly operates within a group dynamic, producing a set of unwritten rules. This demarcates a civil way of interacting with ex-partners and this sense of decorum is what Elias (2000) outlined as part of the habitus of culture and manners. A code of manner is formed through various social interactions arising within the forums where there is self-regulation in relation to peer group norms.

“Benchmarking” was a distinct sub-theme where individuals use Tinder or Facebook in order to gather information out of curiosity, or they evaluated themselves after undertaking a comparison. The period following a break-up can be challenging for many people and it can make moving on a difficult process. During this time anxiety, sadness, anger (Chung et al., 2003; Sbarra & Emery, 2005), psychological distress (Rhoades et al., 2011) and loneliness (Moller, Fouladi, McCarthy, & Hatch, 2003) are common experiences. As a result, it would seem natural for one to seek ways of reducing these negative emotions as part of the process of moving on. It is possible that one way of reducing such emotions is through “benchmarking”.

For some, this was a positive expression as it was apparently motivated by interpersonal curiosity (Litman & Pezzo, 2012); likely because curiosity can relieve uncertainty (Litman & Pezzo, 2007), including seeking a resolution after a relationship break-up (Slotter, Gardner & Finkle, 2009). For others, this was seemingly more negativity as there was an apparent motivation to discern how badly an ex-partner was doing in order to improve one’s own emotional experience and self-esteem. It has been found that individuals who use the platform for this purpose are more likely to demonstrate problematic Tinder use (Orosz et al., 2018). This is likely

because these individuals can be more socially anxious and spend more time online, as is the case for adolescents (Valkenburg & Peter, 2007). This suggests that a risk factor for problematic Tinder/Facebook behaviour relates to the amount of time an individual spends online, something which is confirmed by previous research (e.g., Reynolds, Henson & Fisher, 2011; Berson, Berson & Ferron, 2002).

“Moving on” after a relationship has ended was the next level sub-theme represented in the data. Lee and O’Sullivan (2014) found that a difficulty in moving on from a relationship break-up is normal, and therefore predictive of attempts to remain in contact with an ex-partner. They referred to this as “post relationship contact and tracking” (PRCT), which is characterised by efforts to maintain or re-establish contact after a break-up, occasionally manifesting as unwanted pursuit behaviours, such as, stalking and cyberstalking (Lee & O’Sullivan, 2014). Within this sub-theme was a polarity between individuals who tried to maintain contact because they were struggling to adjust to a break-up versus those who remained in contact as friends, which indicated that they had moved on. Among those who had difficulty moving on, the motivation for contact was often intended to rekindle romance, which potentially delays the emotional recovery process (Marshall, 2012).

This dynamic also suggests that, in regards to online security, the power is with the receiver of re-contact. For example, if the contact is unwanted and/or indicates that the ex-partner is struggling post-break-up, then the individual may block their ex-partner. This option is something that victim support organisations could encourage and Facebook could offer when users report online misconduct.

Explicitly expressing “care and concern” was the next sub-theme. Within these responses are references to maintaining a friendship (rather than a romance) through continued contact, signalling platonic care and concern. Post-relationship, an ex-partner might express concern about how the other is coping or progressing. This is because a relationship end is a difficult time for many, and a person may feel complex emotions for their ex-partner. For those who have been in a long-term relationship, these feelings might be stronger, making cutting all ties with an ex-partner more difficult (Simpson, 1987; Rhoades, Kamp Dush, Atkins, Stanley & Markman, 2011). Additionally, ex-partners might share similar interests or friendship groups. Therefore, after a break-up in which it would be expected that they still care for each other platonically, they might remain friends. Facebook is a platform which facilitates this.

The final rule for ex-partner communication was “social game playing”. This referred to individuals deliberately using Tinder and/or Facebook for some form of personal benefit. Berne (1964) was the first to outline that social interactions consist of various games which people play. Game playing is an ongoing series of concealed transactions that progress to a specific outcome. It could be a desire to attain sexual pleasure or rekindle contact in the case of some participants. Those individuals who reported using these platforms as part of a strategy to attain casual sex outline it is due to these platforms requiring minimal effort and maximal anonymity (Finn, 2004; McGrath & Casey, 2002) rather than specifically related to stalking intentions. This could be indicative of gender differences in post-break-up emotions (e.g., Perilloux & Buss, 2008) as men are more likely to report feeling sexually frustrated following relationship dissolution. In this instance, Tinder might mitigate risk

of stalking by providing an outlet for such behaviours. For those attempting to rekindle a relationship with an ex-partner using Tinder and/or Facebook, the strategies of “[faking] an accidental message...” and getting back in contact by "coincidence" are part of this game.

Overall, the qualitative analysis regarding ex-partner contact and tracking on Tinder and/or Facebook did not indicate any obvious stalking characteristics. Although game playing could be thought of in this framework, this is different to the machiavellianism involved in stalking (see Chapter 3 of the thesis). However, the findings provided insight about the nature of the various social platforms operating as distinct ecological environments (Bronfenbrenner, 1979). The findings also added to existing literature on Facebook user behaviour (e.g., Papacharissi & Mendelson, 2011; Joinson, 2008; Fox et al, 201; and Mehdizadeh, 2010) by reflecting on the motivational factors behind ex-partner contact and tracking based on four key motivations: benchmarking (e.g., social comparison and elevating self-esteem), adjust to a breakup (e.g., forming a friendship or rekindling a romance), expressing care and concern (e.g., continuing a friendship) and social interaction (e.g., casual sex or personal benefit).

Non-romantic communication on Tinder. When referring to communicating with a non-romantic interest on Tinder, responses outlined under the sub-theme “deciding how to engage” were polemical. Participants were either emphatic in stating they wouldn’t engage in such behaviour, suggesting that these individuals are likely using Tinder to meet a romantic partner, or respondents stated they would engage with someone they were not romantically interested in and went on to describe their reasons. For them, their reasons were related to curiosity or entertainment.

Among respondents motivated by "curiosity", Erikson's (1950) psychosocial stages of development provided a framework for thinking about adult and adolescent relationship concepts. For example, responses outlining curiosity about becoming romantically acquainted were considered mature adult motivations and responses identifying curiosity about the casual sex opportunities represented an overlap between adolescent and adult responses.

This desire for sex without commitment is related to low conscientiousness in individuals (Orosz et al., 2018; Costa & McCrae, 1988). These individuals are less likely to consider the feelings of others and are also more likely to engage in problematic social networking site use (Andreassen, Torsheim, Brunborg & Pallesen, 2012). Conscientiousness and agreeableness are traits which seemingly increase in early and middle adulthood (Srivastava, John, Gosling & Potter, 2003), and therefore it is likely that a desire for casual sex is most common among emerging adult Tinder users. Although not all individuals who desire casual sex will have low conscientiousness and problematic Tinder use, this is useful information for profiling risky Tinder users. Beyond personality factors which have previously been explored for problematic Tinder use, future research should look to investigate new risk factors (e.g., age, empathy and motivation).

However, in line with previous studies on online dating (Couch & Liamputtong, 2008), the relevance of casual sex curiosity was expected, given that Tinder is advertised as an application for facilitating casual relationships. This desire for sex is related to Maslow's hierarchy of human needs (1943), and Tinder, along with other online dating apps provides a consensual platform where individuals can fulfil this need. Sumter et al (2016) support

the view that casual sex is a general motivation for using Tinder, but there are other motivations such as: validation and self-worth; excitement; and ease of communication.

“Entertainment” was the next sub-theme regarding non-romantic Tinder communication. For some, this desire for entertainment was driven by loneliness, as they reported they were hoping to find friendship or connection. This was also highlighted within previous research on both single and partnered users (Timmermans, Caluwé & Alexopoulos, 2018). For others, it appeared they were involved in a game being played for fun and excitement. Some responses were about using Tinder for humor; these appeared more self-centered and also indicated a lack of consideration of others, something related to low conscientiousness, a lack of empathy and adolescent concepts when referencing the various stages of human development. Tinder was also seen as an exciting game for some, particularly for those engaged in a short-term mating strategy with an emphasis on a sexual encounter (Buss and Schmitt, 1993; Buss, 2003; Sumter et al., 2016).

Overall the qualitative exploration regarding non-romantic Tinder communication did not indicate any obvious stalking motivations; however, within each sub theme there were variations of responses ranging in their maturity. Perhaps stalking motivations for using Tinder non-romantically did not emerge because of its interface. Tinder offers little information on users and, with its conveyor-belt “swipe”, discourages dwelling. Even as a user builds matches, the app’s home-screen presents an over-abundance of prospective partners, rewarding a lack of focus. If stalking is typified by a fixation on someone, Tinder’s ecosystem presents an infinite supply of prospective partners.

The findings added to existing literature (e.g., Ligtenberg, 2015) whilst reflecting on the key motivations behind Tinder use, as based on: curiosity (e.g., about relationship or casual sex opportunities) and entertainment (e.g., having fun and relieving boredom). For the Tinder environment, some responses highlighted a potential lack of care for the consequences played upon a stranger, indicating less self-regulation at play in the ecological environment. This is possibly because a Tinder profile offers less information, suggesting it might feel less personal and easier to blend into the Tinder crowd. Additionally, Tinder tracks less activity publicly, unlike Facebooks newsfeed, which broadcasts users' activity. As a result, people may have less social accountability within Tinder.

Limitations and future research. The aim of this research was to explore participant reasons for possibly engaging in certain behaviours on Tinder and/or Facebook which could be associated with stalking tendencies. As no such findings emerged regarding stalking, this highlights some limitations of the methodology. It is possible that the behaviours depicted in the open-ended questions (one and six) were tapping into similar types of social behaviours that were unrelated to stalking, and therefore the questions needed to be more definitive. However, this could also point out distinct limitations within the stalking related attitudes questionnaire (SRAQ) because when comparing the data items with their respective stalking attitudes scores (high or low groups) there were antinomies (Billig 1996). This indicates that the SRAQ, although a useful tool, should not be used in isolation when investigating stalking attitudes, as it appears a rigid tool with certain limitations. For example, it does not allow an exploration of context or motivation.

Another limitation of this study is related to subjectivity. Despite the adherence to a phenomenological method, the extraction, collation and interpretation of the data, as with any research, is still tied to the subjective positions of the researcher. Additionally, this research relied on participants to self-report their behaviour. Future research could employ other data sources, such as the views of ex-romantic partners of the participants, to establish convergence with the research results. Furthermore, future research might consider assessing individuals' online contact and tracking behaviours at different post-relationship stages using a longitudinal approach. Fox and Anderegg (2014) have stressed that individuals' perception of normative information seeking online about a potential or current romantic partner reportedly changed as relationships progressed.

Another limitation is that participants might have been less likely to reveal the negative side of their personalities, as they engage in the presentation of the self (Goffman, 1993) which entails keeping the backstage hidden. Although it may be a limitation, given two distinct methods were used to analyse the data, the idea that people are stalking does not have the necessary evidence.

Conclusion

The results indicate a divergence when the two open-ended questions were analysed, each exploring the type of interactions that took place on Tinder and Facebook. Whilst both were situated within cyberspace, they were two ecologically different environments, each having varying sets of rules around contacting ex-partners and other potential romantic/sexual/friend connections. For non-romantic Tinder communication, the first issue is around "deciding how to engage", and once this is established, the motivations to

engage include "curiosity" and seeking "entertainment", each requiring certain informal rules. For ex-partner contact and tracking, "deciding how to engage" was also the first issue, then the motivations which emerged included "benchmarking", "moving on", "care and concern" and "social game playing" all employing different strategies deployed within the ecological environment (Bronfenbrenner, 1979).

For both of these ecological environments, there were no particularly pathological aspects related to stalking. Rather, the reasons for engaging in either of the ecological environments appeared more to reflect the advantages of online communication and dating, such as: it can extend one's social network more effectively; it affords easy sexual hook-ups; it's a tool for validation and self-worth; satisfies interpersonal curiosity; provides excitement/entertainment; and assists one in moving on from a past relationship.

This exploration contributes to the findings outlined in the quantitative analysis of Part 1. Through analysing the data qualitatively and from an individual perspective, the motivations for using the platform in such a way were clearer and contributed to our understanding of the user profile.

CHAPTER 5

Psychometric Critique

Critique of the Stalking Related Attitudes Questionnaire

Introduction

This Chapter endeavours to critically review the Stalking Related Attitudes Questionnaire (SRAQ; McKeon, 2010) and survey the available literature. The purpose of the SRAQ is to measure attitudes linked to stalking by calculating individuals' alignment with stalking myths and stereotypes about stalking and stalking victims.

Chapter 2 and 3 of the theses used the SRAQ. There are two measures of stalking attitudes, but only the SRAQ has an adequate research basis supporting its psychometric properties (McKeon, McEwan & Lubbers, 2014). Through identifying the SRAQ's strengths and weaknesses and evaluating its research utility, this chapter will make recommendations for improving both the measure and research utilising it. Continued research of stalking attitudes is essential for improving the awareness, assessment and intervention of stalking, as well as assisting law enforcement and victim safety (Dennison & Thomson, 2002; Sheridan, Davies & Boon, 2001).

Unlike almost any other crime, stalking is largely defined by its victims, meaning that community perceptions of what does and does not constitute stalking are of importance (Mullen et al., 2009; Sinclair & Frieze, 2000). For

example, Spitzberg and Cupach (2007) state that victims have defined stalking as an unwanted and persistent course of conduct that causes the victim some level of distress and/or fear. Other studies of community attitudes towards stalking have revealed discrepancies between attitudes and the reality of stalking; for example, the general public tend to perceive stranger stalkers as most common and most likely to be violent (Dennison & Thomson, 2002), while in reality it is ex-partners who are most likely to stalk and to escalate to violence (Farnham, James & Cantrell, 2000; Morewitz, 2003; Duff, Sheridan & Rajakaruna, 2018). These discrepancies are concerning as we know attitudes impact recognition of stalking behaviour and thus also the potential responses of the police, other professionals and peers to whom victims seek for support (McKeon et al., 2014; Kamphuis et al., 2005).

Stalking literature has emphasized the importance of perceptions and attitudes because people often behave accordingly (Sheridan & Davies, 2000; Sheridan, Davies & Boon, 2001). Yet literature regarding cognition and stalking is limited (McKeon et al., 2014; Cooper & McEwan, 2017). Furthermore, our understanding of the behaviour is hindered by the lack of both a consensus on stalking's definition and of a well-validated, reliable measure to assess the related hypothesised cognitions. To date, there are only two measures of stalking attitudes published within the psychological literature: The Stalking Related Attitudes Questionnaire developed in 2002 (SRAQ; McKeon, 2010); and the Stalking Myth Scale (SMS; Sinclair, 2012).

Criteria used to critique the measure

The Standards for Educational and Psychological Testing (American Educational Research Association [AERA], American Psychological Association

[APA], National Council on Measurement in Education [NCME], 1999) were used in order to define acceptable test development practice. Empirical findings advancing test construction were also taken into consideration. For example, a review for best practices in development of survey scales (Gehlbach & Brinkworth, 2011) suggested avoiding reverse-scored items; using Likert-type scales between five to seven points according to the construct in question; ensuring that all components of the items apply to all intended participants; and labelling response scale anchors so that they are specific to the construct in question.

Classical test theory can also be used to evaluate the psychometric properties of a measure (Wu, Tam, Jen, 2016), by assessing evidence for reliability and validity (AERA, APA, NCME, 1999). Evidence for reliability is based on: test-retest reliability; differences in test content; internal consistency; and inter-rater reliability. To evaluate the adequacy of internal consistency coefficients, Ponterotto and Ruckdeschel's (2007) reliability matrix for internal consistency was also referred to. The validity of a test is based on evidence of: a test's content (i.e., content validity); its internal structure; the measure's relationship with other variables that are theoretically related; the response processes of examinees; face validity; and the outcomes and impacts of using the measure (AERA, APA, NCME, 1999).

Overview of the tool

The SRAQ was developed based on literature describing different types of stalkers and stalking behaviours, and hypotheses about attitudes held by stalkers (e.g., Mullen et al., 2009; McEwan, Mullen, MacKenzie & Ogloff, 2009), as well as concepts from Burt's (1980) Rape Myth Scale (adapted to be appropriate to stalking). The SRAQ (McKeon, 2010) is a 34-item self-report

survey comprised of Likert-type response scales from 1-absolutely untrue to 7-absolutely true. Fifteen items are gender specific to a male perpetrator and female victim context (e.g., "Some women actually want to be stalked; they see it as a compliment"), and the remaining nineteen are non-gendered (e.g., "Stalking should be dealt with in civil, not, criminal law"). All items are worded so that "true" responses indicate greater agreement with stalking myths or stereotypes, aside from items two, 14, 15 and 33, which are the opposite and therefore must be reverse-scored; according to The Standards, this is a limitation. Historically, the reason for reverse scored items is to reduce or eliminate acquiescence and boredom (Rorer, 1995). However, more recently this has been advised against due to findings that this can result in miscomprehension (Swain, Weathers & Niedrich, 2008) and has no added benefit when a scale is short in length (van Sonderen, Sanderman & Coyne, 2013).

The Likert-type response scale is an ordinal measure, which research has documented is a popular psychometric scoring scheme. Likert-type scales are advantageous for measuring attitudes, as they do not require the participant to take a stand on a particular topic, and rather allow them to respond with degrees of agreement, representing a continuum of attitudes. However, it is unclear how accurate Likert-type scales are at measuring the true attitudes of respondents as the space between each choice on the scale cannot be equidistant, nor can we control for the meaning of each choice for each individual (Dawes, 2008; Bishop & Herron, 2008). In addition, using a five or seven-point Likert-type scale (as in McKeon et al., 2014 study) could be problematic, as it can lead to acquiescence, whereby participants show a pattern of circling only the middle response ("neither agree nor disagree")

throughout a survey. It is, therefore, more advantageous to use six-point Likert-type scales, as they require participants to endorse an item either positively or negatively; this is a suggestion for future revisions of the SRAQ. However, it is also of note that this could impose artificiality in the data due to not allowing individuals to hold a neutral response.

Despite the possible limitations stemming from using Likert-type scales, the measure has a number of important clinical and academic purposes (Cooper & McEwan, 2017): for example, it can be used in studies with offenders to examine the kinds of attitudes that might contribute to stalking behaviour, and it can be used to measure attitudes supportive of stalking in the community. It has also been found to be a reliable measure of stalking attitudes in Chapter 3 of the thesis measuring public attitudes of stalking.

Critique of the Psychometric

Table 1. Summary of studies that report on the factor structure, reliability, and validity of the SRAQ.

	Factor structure	Reliability	Validity
DeFazio & Galeazzi, (2004)	1. Blaming the victim 2. Stalking is Nuisance not crime	Found that a three-factor structure was not reliable.	Reported good face validity
Kamphuis et al., (2005)	1. Stalking is flattering ($\alpha = .80$) 2. Blaming the victim ($\alpha = .78$) 3. Stalking is a nuisance ($\alpha = .74$)	No comment on reliability	Reportedly validated cross-culturally
Dunlap, (2010)	1. Stalking is harmless flattery ($\alpha = .81$) 2. Blaming the victim ($\alpha = .75$) 3. Stalking is a nuisance ($\alpha = .80$)	No comment on reliability	Stalking attitudes were strongly connected to hostility toward women, gender-role stereotyping and romantic beliefs.
DeFazio et al., (2015)	1. Stalking is only courtship ($\alpha = .80$) 2. Courtship pursuit is normal ($\alpha = .71$)	Found that a three-factor structure was not reliable.	No comment on validity
Dunlap et al., (2015)	1. Victim blaming ($\alpha = .77$) 2. Flattery and courtship ($\alpha = .76$) 3. Minimizing stalking as a crime ($\alpha = .84$)	No comment on reliability	Victim blaming, flattery and minimizing stalking attitudes had direct and indirect effects on perceptions of guilt for intimate stalking cases No comment on validity
McKeon, McEwan & Luebbers, (2014)	1. Stalking isn't serious ($\alpha = .90$) 1. Stalking is romantic ($\alpha = .76$) 3. Victims are to blame ($\alpha = .70$)	Internal reliability above $\alpha = .90$ in total sample, police sample and community sample.	No comment on validity The measure was not correlated with any measure similar in nature

Post development testing. A number of studies have used the SRAQ and offered insights into its validity, reliability and factor structure (Kamphuis

et al., 2005; DeFazio, Sgarbi, Moore & Spitzberg, 2015; DeFazio & Galeazzi, 2004; McKeon, Ogloff, McEwan & Mullen, 2011; and McKeon et al., 2014). Kamphuis and colleagues (2005) used the SRAQ among police officers and general practitioners (GPs) from four European countries, suggesting that the measure can be applied cross-culturally. The authors used Principal Components Analysis (PCA) to assess the factor structure of the SRAQ and identified a three-factor solution, which they labelled 'Blame the victim', 'Stalking is a nuisance', and 'Stalking is flattering'. Dunlap's (2010) research confirmed this factorial structure.

The most recent study assessing stalking attitudes and beliefs conducted by McKeon and colleagues (2014) also examined the factor structure of the SRAQ in samples of police and the general public. Their findings corroborated those of Kamphuis and colleagues (2005). The factors were labelled 'Stalking isn't serious', 'Stalking is romantic' and 'Victims are to blame'; a range of literature regarding the nature of stalking supports these factors.

'Stalking isn't serious' indicates beliefs that both minimise stalking and also underestimate the correlation of stalking with violence (e.g., "If there is no actual violence, it shouldn't be a crime" and "Stalking is a type of violence"; Morewitz, 2003; Dennison & Thomson, 2002). This extends to different contexts too, such as (ex)-intimate or stranger (Phillips, Quirk, Rosenfeld & O'Connor, 2004). 'Stalking is romantic' is also consistent with the wider body of literature on Obsessive Relational Intrusion (ORI; Cupach & Spitzberg, 2004) and stalking typologies (e.g., Spitzberg & Cadiz's, 2002). For example, a number of authors have suggested that the media have crafted persistent romantic pursuit as an ideal whereby individuals believe that it is acceptable

and desirable as it is expected to result in sexual or relationship success (Davis, Swan & Gambone, 2010; Lambert, Smith, Geistman, Cluse-Tolar & Jiang, 2013; Lippman, 2013). 'Victims are to blame' is an attitude that is consistent with other forms of interpersonal violence, such as rape and intimate partner violence; these forms of violence are socially constructed to have a gender bias and attract victim-blaming attitudes (Henning, Jones & Holdford, 2005; Suarez & Gadalla, 2010).

Conversely, there are two studies within the literature that argue for a two-factor structure of the SRAQ. DeFazio and Galeazzi (2004) labelled these, 'Blaming the victim' and 'Stalking is nuisance not crime'. In 2015 De Fazio, Sgarbi, Moore and Spitzberg updated this research, corroborating earlier findings of a two-factor structure, these being labelled 'Stalking is only courtship' and 'Courtship pursuit is normal'. They argued that the factor structure identified by Kamphuis and colleagues (2005) was not a viable factor structure. Specifically, 'Blaming the victim' did not produce a Cronbach's alpha that was sufficient to support the three-factor structure.

However, the factors proposed by De Fazio and colleagues (2015) only tap into a specific aspect of stalking: that which occurs within an (ex)-intimate context, therefore limiting the generalisability of the SRAQ, as we know that stalking also occurs between strangers, known non-ex-intimates and online. It is possible that the SRAQ data in these two studies was impacted by the use of a very small sample size, and cultural differences in relation to stalking since the studies were conducted in Italy. For example, it may be that the nature of stalking in Italy occurs mostly within the context of romantic pursuit, or this is how the phenomenon is understood within the culture.

Reliability. Reliability of the SRAQ and its subscales is robust in terms of internal consistency. The total SRAQ and its subscales had coefficient alphas that were in the excellent range (Ponterotto & Ruckdeschel, 2007) for two differing samples in McKeon and colleagues' (2014) research. Inter-rater reliability was not reported or assessed (as this is not appropriate for self-report measures), nor was test-retest reliability assessed.

Although attitudes remain relatively stable across time (Eagly & Chaiken, 1993; Petty, Briñol, & DeMarree, 2007), they are also malleable (Converse, 1964; Schwarz, 2007), and therefore might shift as a result of specific intervention. For this reason, the SRAQ could be used as an outcome measure for a stalking related intervention, and we might expect over time individuals to evidence a decrease in endorsement of pro-stalking attitudes. For example, in research by De Fazio and colleagues (2015) some SRAQ scores showed a statistically significant decrease in mean between 2007 and 2010 when there was a change in Italian stalking legislation. It indicated there was a decrease in endorsement of pro-stalking attitudes. However, we cannot draw any robust conclusions from this data as the study did not sample the same participants at time one and time two (De Fazio et al., 2015).

Validity. Overall the validity of the SRAQ is positive. Face validity of the SRAQ is good; all items are related to stalking myths or stereotypes identified by previous and current research. Kamphuis and colleagues (2005) concluded that the SRAQ has good content validity as its items measured a range of stalking related attitudes such as victim blaming, positive and negative views of the behaviour, and stalking within an intimate relationship and stranger context. However, the measure does not provide any norms or meaningful cut off scores that would indicate high or low endorsement of

stalking attitudes; this could limit its utility. Future research using the SRAQ might think about reporting norms for the samples they use.

Content validity could also be limited due to the gendered nature of some of the items, which do not reflect female stalking perpetrators and male victims. In addition, although the measure included items referring to stranger stalkers, the items were biased towards an ex-partner stalking context, which could be problematic regarding generalisability of the measure. However, ex-partner stalking is evidenced to be the most common and most likely to escalate to violence (Duff & Scott, 2013; Farnham et al., 2000; Morewitz, 2003), and therefore the bias towards these items in the SRAQ might be an appropriate reflection of the nature of stalking. Furthermore, there is an apparent lack of items which capture cyberstalking specific attitudes. Considering the overlap of stalking and cyberstalking perpetrator risk factors found in Chapter 2, it might improve content validity if the authors included items relating to cyberstalking in the SRAQ. At present there are no cyberstalking attitude measures, most likely due to the relative newness of the behaviour, and thus this would be a much-needed contribution.

Literature has evidenced convergent validity of the SRAQ, as stalking attitudes have been found to correlate with attitudes such as hostility toward women and gender-role stereotyping that promotes tolerance for stalking behaviour (Dunlap, 2010). We might also expect scores on other measures of attitudes related to intimate partner violence to converge with scores on the SRAQ as these are similar socially constructed concepts which have a gender bias in terms of victim and perpetrator characteristics (Henning et al.,

2005; Suarez & Gadalla, 2010). Research has not provided evidence regarding the discriminant validity of the SRAQ.

In addition, it would be expected that if individuals endorse a number of stalking related attitudes, they might also present similar profiles on behavioural measures that are associated with this such as the ORI scale (Cupach & Spitzberg, 2004; Spitzberg, Marshall & Cupach, 2001). If this were the case it could enable us to develop a better understanding of the association between staking attitudes and stalking behaviours. In order to assess the utility of this measure for uncovering any association, we would also need future research to consider using the SRAQ within a stalking offending population, or research that employs a prospective or longitudinal design. This could improve attempts at preventing and reducing the severity of the behaviour, and also inform interventions for potential victims and perpetrators.

External validity of the measure is good, as a number of inferences have been made regarding attitudes towards stalking in different sectors of the community. For example, we know that individuals tend to perceive women more often than men to be victims and that people are most fearful of stranger stalkers as opposed to ex-partner stalkers (Spitzberg & Cadiz, 2002). We also know that training can impact attitudes positively, as can professional experience dealing with stalking (Lynch & Logan, 2015), as well as educational exposure to the phenomenon (DeFazio et al., 2015).

Administration. The SRAQ is a self-report measure and therefore people do not need to be trained and/or supervised to administer the measure. There is no manual for the SRAQ. The test sheet provides simple instructions on the participant page, and on a separate page there are scoring

instructions, the breakdown of factors and their associated items. The test sheet does not provide norms which limits its interpretive utility. However, it states that a higher score indicates a higher agreement with attitudes that may endorse stalking.

It is possible that responses to the SRAQ might be affected by social desirability biases, which are not measured within the questionnaire. However, the anonymity of self-report measures can counterbalance and/or reduce this effect (Richman, Kiesler, Weisband & Drasgow, 1999). Confounding factors such as having a prior history of stalking victimisation or perpetration could also impact results if not controlled for by researchers when sampling the target population or when analysing their data. These confounding factors are not controlled for within the measure.

Alternatives to the tool. To date, the only other alternative to the SRAQ is the Stalking Myths Scale (SMS; Sinclair, 2006; 2012). Similarly to the SRAQ, the SMS was modeled on the Rape Myth Scale (Burt, 1980). The SMS consists of 37 questions that form three subscales labelled: 'Minimization', 'Victim blaming', and 'Stalking as courtship'. Responses are given using six-point Likert-type response scales ranging from 'strongly disagree' to 'strongly agree'. Higher scores on each subscale equal greater agreement with the stalking myths. Like the SRAQ, the SMS has reverse scored items, which are a mark of a lower quality measure according to The Standards (AERA, APA, NCME, 1999).

Across a number of samples, the scale has also shown consistently good reliability (range, $\alpha = .76$ to $.82$; Sinclair, 2006; 2012; Ervin, 2015; Lippman, 2013). The SMS is free from gender-biased items, unlike the SRAQ. However, gender effects were reportedly still present when examining SMS

scores and attributions regarding the victim and perpetrator, indicating the attribution differences were possibly because of respondent gender. This implies that gender is important in the context of stalking attitudes; there is a real gender difference in the reality of the behaviours as well as of attitudes. Research on the impact of gender in blame attribution for sexual assault echoes the above findings (Ayala, Kotary & Hetz, 2015; Aronowitz, Lambert & Davidoff, 2012; Davies, Gilston & Rogers, 2012; Gerber, Cronin & Steigman, 2004).

SMS scores were significantly positively correlated with attribution indices indicating the measure has good construct validity (Sinclair, 2012). However, there are currently relatively few research papers that examine the psychometric properties of Sinclair's SMS, and it is unclear whether the SMS is measuring a uni- or multi-dimensional construct; as a result, the SRAQ is the superior psychometric.

Weaknesses. The SRAQ was originally designed to measure the general populations attitudes of stalking, but it may also be useful as a measure of the stalking attitudes of perpetrators and victims. At present, its applicability to these populations is limited by the fact that it has never been applied to them specifically; future research should consider this. The SRAQ's utility is also limited in that it does not assess beliefs that, although not specific to stalking, may be related to the behaviour, such as antisocial attitudes. Future research might therefore benefit from revising the SRAQ to include items that reflect attitudes associated with stalking, such as anti-social attitudes.

The most commonly reported limitation regarding the development of the SRAQ is that roughly half of its items are worded in a way that reflects a

gender bias; they represent a female-victim male-perpetrator context (Kamphuis et al., 2005; McKeon et al., 2014). However, although stalking attitudes have been found to be impacted by gender (Yanowitz, 2006; Dunlap, 2010), this difference still exists even when measured using a gender-neutral attitudinal scale (the SMS, Sinclair, 2006; 2012). Some might argue that having gendered items confounds gender differences in data (e.g., inflating the differences), however, it is most likely that there are inherent gender differences in attitudes regarding stalking. This is because there are clear gender differences in expressions of the behaviour (Burke, Wallen, Vail-Smith & Knox, 2011; Dardis & Gidycz's, 2017), and also in gender prevalence rates. Therefore, future revisions of the SRAQ should consider whether making its items gender neutral might actually reduce its validity.

The SRAQ was updated in 2011 (McKeon, Ogloff, McEwan & Mullen, 2011)¹ to be a 22-item measure with Likert-type response scales from 1-strongly agree to 6-strongly disagree. This revised version of the SRAQ overcomes previous issues with gender bias by the re-wording of items to refer to "the victim". It also overcomes the seven-point Likert-type scale's acquiescence issues. However, this has not yet been published, and thus is not publicly available.

Although the authors have addressed some of the possible limitations of the SRAQ in the unpublished update, this chapter is nevertheless important as there has not yet been a critique of the measure which brings together all the available literature using it, or which compares it to the only other stalking attitude measure, the SMS (Sinclair, 2006; 2012). This is important as it may

¹ Access to this measure can only be obtained by correspondence with the author.

assist future researchers in the choice of which measure to use so that research can be more consistent in its methodology.

In addition, this chapter provides a discussion about the issue of gender in stalking attitude research and also the development of cyberstalking and how this should be dealt with in stalking attitude research. Further, considering findings in Chapter 2 and 3, the SRAQ authors might also consider addressing cyberstalking attitudes in future revisions, as this is increasingly prevalent (Clarke, 2004; Maple, Short & Brown, 2011).

Further limitations regarding the reliability of the SRAQ include a lack of evidence of test-retest reliability. Only one study has utilised the SRAQ at two points in time and reported a change in attitudes in accordance with a change in legislation (DeFazio et al, 2015). However, it is unclear how many of the participants in this study were sampled at time 1 and time 2 and how many were newly recruited at time 2. Nevertheless, attitudes may be subject to change over time. For example, with intervention, training or change in legislation. Therefore, future research might consider using the SRAQ in a longitudinal study at two timepoints to discern whether the measure has test-retest reliability.

In addition, although the SRAQ demonstrated relatively strong evidence for the internal structures, it is possible that using alternative methods of analysis would increase confidence in these proposed structures. For example, using confirmatory or exploratory factor analysis as opposed to PCA would strengthen both the evidence regarding internal structures as well as the SRAQ items' load onto their parent factors.

Conclusion

Stalking continues to be a relatively indefinable phenomenon that presents challenges to academic inquiry. However, continued efforts to study people's attitudes, beliefs and perceptions of stalking will improve our understanding of the behavior, assisting us in attempts at reducing its prevalence while also increasing awareness and developing successful interventions for possible victims and perpetrators.

Despite the aforementioned limitations, overall the SRAQ appears to appropriately meet scientific criteria for test construction. It is an easy-to-use questionnaire with established acceptable psychometric properties. The strengths of the SRAQ are well evidenced by the surrounding research base, which although not vast, is expanding with the general academic and social interest in stalking. Positively, the samples on which the SRAQ was developed and validated were heterogeneous in terms of demographics (e.g., varying professionals, cultures and age ranges), and thus we can assume that its basic generalisability is good. However, it would further benefit from being validated with samples of stalking perpetrators and victims. Further evidence of the SRAQ's predictive validity is also needed and may be discerned through administration within prospective and longitudinal research.

Through familiarising myself with this tool I am more knowledgeable on its strengths and weaknesses, informing the evaluation of the studies in Chapter 3 and 4 of the thesis my primary which utilize this measure. The SRAQ's ability to measure attitudes across varying populations with its strong construct and convergent validity make it a good measure for the current thesis research assessing both the general population's attitudes towards stalking and whether these attitudes are associated with individual factors

which might increase the degree to which one holds these attitudes. This review has also highlighted areas of future research using the SRAQ, such as revisions and applications of the measure (e.g., within stalking populations), which will ultimately improve stalking's research base.

CHAPTER 6

Conclusion

The aim of this thesis was to explore perpetrator characteristics and propensity for stalking and cyberstalking by examining previous literature on the topic, then attempting to identify individual differences that could predict stalking related attitudes as well as discerning whether there was any association between self-reported behaviour on social networking platforms and such attitudes. Finally, this thesis aimed to critique a metric of stalking attitudes. Throughout the thesis, the discoveries made have formed recommendations for practice and research, while developing our understanding of both stalking and cyberstalking, so that we are better able to identify dispositional risk of perpetration to inform legislation, prevention and intervention efforts.

Chapter 2 provided a systematic review of the literature concerning cyberstalking perpetrator characteristics. This was the first systematic review of cyberstalking. The aim was broad, so as to capture as much of the existing literature on the topic as possible. Fourteen studies were included in the qualitative data synthesis and provided evidence for a range of variables significantly associated with cyberstalking perpetrators. These variables included adverse childhood experiences, relational variables, individual variables (such as substance misuse and self-esteem), emotion regulation, gender differences, deviant online behaviour and problematic personality traits. Notably, four studies specifically investigated cyberstalking on Facebook (Furbee, 2015; Cole, 2014; Chalk & Jones, 2011; Lyndon et al., 2011), and all found conclusively that Facebook facilitated cyberstalking. In addition, studies that investigated personality found conclusively that aspects of narcissism have a significant impact on cyberstalking perpetration (Furbee, 2015; Smoker & March, 2017; Menard & Piscus, 2014).

Chapter 3 detailed an exploratory study examining public stalking attitudes as a gateway to understanding perpetration. Study one developed our understanding of individual differences in stalking attitudes, with a view to why people may stalk, and why certain individuals may be more likely to stalk than others. Using a regression analysis, a predictive model of pro-stalking attitudes was produced. The model included: being male; lower metrics across openness, age, ME, honesty-humility and venting on Facebook; higher metrics across psychopathy, narcissism, using Tinder for seeking love and using Facebook for covert provocation. This confirmed the well-established gender bias in relation to stalking perpetration. The findings have important implications for professionals identifying dispositional risk of stalking perpetration.

Chapter 4 detailed a secondary exploratory study, which utilised a mixed methods approach to further explore the topic in Chapter 3. This chapter was split in two parts. The first part assessed stalking attitudes and categorised words using a text analysis software which examined individuals' explanations for using Tinder and Facebook for specific purposes, some of which were associated with stalking. The results indicated that stalking attitude scores were not differentiated based on whether respondents would communicate with an ex-partner online. However, for individuals who reported communicating online with someone they were not friends with offline and/or communicating with Tinder matches who they were not romantically interested in, stalking attitudes were significantly higher. The results also indicated that, although there were no significant word category differences between high and low stalking attitudes, *social process* words

were however used significantly more than all other analysed word categories in the study across the majority of participant responses.

Unfortunately, using word categories limited the conclusions that could be drawn from such findings, and therefore, a thematic analysis was conducted on the data in the second part of this chapter. From the analysis one overarching theme related to the ecological environment (Bronfenbrenner, 1979) of Facebook and Tinder emerged, within which sub-themes were generated. Whilst both were situated within cyberspace they were two ecologically different environments, each having varying sets of rules around contacting ex-partners and other potential romantic/sexual/friend connections. For non-romantic Tinder communication the first issue is around "deciding how to engage" along with "curiosity" and seeking "entertainment", each requiring certain informal rules. For ex-partner contact and tracking, "deciding how to engage", "benchmarking", "moving on", "care and concern" and "social game playing" all employed different strategies, each deployed within an ecological environment (Bronfenbrenner, 1979).

For both of these ecological environments, there were no particularly pathological aspects related to stalking. Rather, the reasons for engaging in either of the ecological environments appeared more to reflect the advantages of online communication and dating.

Chapter 5 was a critique of the stalking related attitudes questionnaire (SRAQ; McKeon, 2010), which was used in Chapter 3 and four of this thesis. Studies that used the SRAQ have offered insights about its validity, reliability and factor structure. Overall, it has robust reliabilities and internal consistency. It also has good validity, including cross-culturally to a degree,

and good face validity, as all items are related to stalking myths or stereotypes identified by previous and current research. However, content validity could be limited due to some of the items' gendered nature and a bias towards an (ex)partner stalking context; this is problematic regarding the measure's generalisability. Research using the SRAQ to develop a better understanding of the association between stalking attitudes' and behaviours would be beneficial.

Limitations of thesis

In Chapter 2's systematic literature review, most notable limitations were related to issues of bias and generalisability. Firstly, there was no consistent measure of cyberstalking used across studies. This meant that a synthesis by meta-analysis was not possible. In addition, only papers written in English were included in the synthesis, meaning generalisation of results are limited to English speaking cultures. These decisions were made based on time and financial constraints and may have biased the results of the review. Furthermore, all but two of the included studies used university students, also impacting generalisability of the findings as these individuals tend to be a subpopulation that Henrich and colleagues (2010) referred to as WEIRD (Western, Educated, Industrialized, Rich, and Democratic), and therefore, they are unrepresentative of the general population.

Notable limitations of both Chapter 3 and 4 relate to social desirability biases, confounding factors and the generalisability of the results. Due to the thesis topic being about an undesirable phenomenon, participants might have demonstrated socially desirable responding (Pedregon, Farley, Davis, Wood & Clark, 2012). However, in an attempt to counteract the effect of this bias, participation was anonymous. Additionally, these studies, similar to the

systematic review, were limited by the participants mostly being WEIRD (Henrich et al., 2010; Machery, 2010), which raises issue of generalisability beyond a specific section of the population. Further, the relative newness of the Tinder motivations measure and the Facebook questionnaire must be considered. Although both demonstrated good reliability in the current sample, their psychometric properties need further exploration.

In relation to Chapter 5's critique of the SRAQ, the most commonly reported limitation regarding the development of the SRAQ was that roughly half of its items were worded in a way that reflected a gender bias; they represent a female-victim, male-perpetrator context (Kamphuis et al., 2005; McKeon et al., 2014). This limits generalisability to female perpetrator populations. Another aspect limiting generalisability was that the SRAQ items did not address cyberstalking, which we know is increasingly prevalent (Clarke, 2004; Maple, Short & Brown, 2011). Lastly, the SRAQ's utility is limited in that it does not assess beliefs non-specific to stalking that may be related to the behaviour, such as antisocial attitudes.

Implications for practice

The findings of the systematic literature review revealed key static risk indicators (e.g., gender) and dynamic risk factors (e.g., grandiose narcissism, motivation and substance misuse), which might be useful to include in revisions of cyberstalking risk measures (e.g., *Guidelines for Stalking Assessment and Management*, Kropp, Hart & Lyon, 2008; *Stalking risk profile*, Mackenzie et al., 2009). These findings might also benefit legislation revisions, helping protect potential future victims of cyberstalking by criminalising the behaviour and sanctioning it appropriately. In addition, suggestions for revised support for victims were made as well as suggestions

for stalking intervention programmes; for example, programmes might be delivered to men and women separately due to the different prevalence rates of the behaviour, methods of perpetration and respective risk factors.

Given the findings from chapter 3 regarding personality, further suggestions were made regarding victim and perpetrator risk checklists. For example, including reference to traits such as: interpersonal game-playing (Jonason & Kavanagh, 2010); sexual coercion (Camilleri & Quinsey, 2009); callousness and low agreeableness; an attitude of entitlement (Jones & Paulhus, 2011); aggressive reactions to rejection and provocation (Martinez, Zeichner, Reidy & Miller, 2008; Twenge & Campbell, 2003); a sense of superiority; as well as low openness and lower honesty-humility dimensions.

In regard to practical implications for both Tinder and Facebook a number of suggestions were made. For example, the idea that future Tinder iterations might consider a mandatory survey when users generate their profiles, which include questions such as motivations for using the application. In addition, that both sites might use warning messages that raise user awareness of possibly problematic online behaviours related to stalking and cyberstalking.

Recommendations for Future Research

This thesis highlighted several avenues that would benefit from future research. Firstly, the aforementioned lack of systematic literature reviews exploring cyberstalking indicates a gap in the literature and therefore a need for further systematic reviews on the topic's other aspects. Additionally, future research with prospective designs is needed to establish a chronological sequence of the identified risk factors and possible stalking and cyberstalking behaviours.

Chapter 3's recommendations for future research pertained to improving the MES and the SRAQ, as well as further research of the possible relationship between Tinder and stalking. In addition, as all relationships are interdependent systems, the research base regarding stalking within an intimate context would benefit from research that includes aspects of both partners in accounting for the nature of stalking and unwanted pursuit.

Chapter 4's investigation of participant explanations for certain online behaviours was limited by the research's use of word categories to analyse language, as this did not capture context. Therefore, future research using qualitative methods on the data would be needed to extend learning. In addition, future research might consider interviewing participants about their online behaviour in order to extract more detailed answers. Given that stalking attitudes were undifferentiated by online behaviour towards an ex-partner, the results were contrary to many expectations. Thus, it may be that the term "stalking" is an over-used concept in the social forums of relationships and sexuality, and its usage should be narrowed into something more specifically problematic in order to clarify the patterns of association.

Lastly, although the strengths of the SRAQ were well evidenced by the surrounding research base, in order to assess its utility for uncovering specific associations between stalking attitudes and behaviours, literature is needed that uses the SRAQ within a stalking offending population, or that employs a prospective or longitudinal design. Future research with offending populations would be necessary to discern whether any of the perpetrator characteristics found within this thesis generalise to the population.

In conclusion, cyberstalking diverges from offline stalking in terms of the gender normative. The systematic review revealed that instead of

conceptualising cyberstalking as a male dominated crime, like with offline stalking, we should think further about how cyberstalking is expressed differently by gender. In addition, doubts have been raised regarding ex-partner stalking and whether there are other more appropriate explanations for people's behaviour in this context. For example, more pro-social explanations include the trauma of a relationship ending, whereby individuals may struggle to move on, or scenarios wherein individuals remain friends due to shared friends and interests.

Overall, the data presented in this thesis provides preliminary support for RGPT's potential in advancing understanding of cyberstalker motivation. It also provides a nomological network of predictors for stalking attitudes, including being male, younger, having less honesty-humility, less openness and less venting on Facebook and higher psychopathy, higher narcissism, higher covert provocation on Facebook, and higher motivation to use Tinder to find love. These findings are important for identifying dispositional risk of stalking perpetration and could be used to inform risk checklists.

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Appendix

Appendix A: Search to identify existing and previous systematic reviews and/or meta-analysis on the topic.

The screenshot displays the search interface of the Cochrane Database of Systematic Reviews. At the top, there are four tabs: "Search", "Search Manager", "Medical Terms (MeSH)", and "Browse". The "Search" tab is active, showing a search box with the text "cyberstalking" and a dropdown menu set to "Title, Abstract, Keywords". Below the search box are links for "Search Limits", "Search Help", and "Add to Search Manager". A "Clear" button is also present. The search results section shows "All Results (0)" and a list of filters: "Cochrane Reviews (0)", "All", "Review", "Protocol", "Other Reviews (0)", "Trials (0)", "Methods Studies (0)", "Technology Assessments (0)", "Economic Evaluations (0)", and "Cochrane Groups (0)". The "All" filter is selected. The main content area indicates "Cochrane Database of Systematic Reviews : Issue 3 of 12, March 2017" and "Issue **updated daily** throughout month". A message states: "There are 0 results from 0 records for your search on 'cyberstalking in Title, Abstract, Keywords'".

Appendix B: Inclusion/exclusion pro-forma template.

First author:

Date:

Title:

Inclusion criteria	Criterion met?	Comment
<p>Study design:</p> <ul style="list-style-type: none"> • Cohort (Longitudinal) • Case control • Cross-sectional • Questionnaire (interview, self-report, survey) 	<p>Yes Unclear Discuss No</p>	
<p>Population:</p> <ul style="list-style-type: none"> • General population • Cyberstalking perpetrators • Includes a population of non-cyberstalking perpetrators • Representative sampling • Internet users • Human participants • Over age 16 	<p>Yes Unclear Discuss No</p>	
<p>Exposure:</p> <ul style="list-style-type: none"> • Risk factors: e.g., criminal behaviour, online deviant behaviour, obsessional relational intrusion, psycho-social problems, previous relationship history, anti-social peers, weak safety controls on SNS or computer, rejection sensitivity, substance misuse etc. • Protective factors: e.g., secure attachments, no MH history, pro-social peers, reduced time online. • Appropriate measure of individual factors with reported validity and reliability scores. 	<p>Yes Unclear Discuss No</p>	
<p>Outcomes:</p> <ul style="list-style-type: none"> • Cyberstalking defined. • Outcome measure clearly defined. • Measure to be objectively and reliably measured. 	<p>Yes Unclear Discuss No</p>	

Evaluation by Reader:

Quality of reporting	Low/mid/high
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Consistency between aims, methods and results	Low/mid/high
Final decision (Include or Exclude)	Include/Exclude

Appendix C: Summary of excluded studies and reasons for exclusions.

Reasons for exclusion	Number of articles excluded at stage 1 (inclusion/exclusion)	Number of articles excluded at stage 2 (quality assessment)	Any discrepancies between reviewers
Population	371	3	no
Methodological issues		18	no
Outcome		0	no
Other e.g., not relevant to review question/topic and/or duplicates/not in English		14	no
Total relevant	49	14	0

Appendix D: Data extraction pro-forma template.

Title	
Author (Contact details)	
Date	

Sample	Population	
	Sample size	
	Geographical location	
	Method of recruitment	
	Period of data collection	
	Hypothesis/Research aims	
	Demographics (e.g., age, gender)	
	Confounding characteristics (e.g., SES, ethnicity, race, profession, criminal convictions, and mental health diagnoses)	
Topic of Interest	Cyberstalking Cyber unwanted pursuit Obsessive relational intrusion Cyber obsessional pursuit Risky online behaviours related to cyberstalking NOT Cyber bullying	
Design	Research type e.g. quantitative	
	Research design	
	Method of data collection (e.g., who, when, where, how, how long)	
	Tools used (standardised questionnaires/surveys; interviews)	
	Method of statistical analysis	
Eval/ Measure	Relationship status	
	Relationship history details	
	Cyberstalking definition	

	Unit of measurement for cyberstalking	

	Perpetrator risk factors	Perpetrator protective factors
Psychological risk factors E.g., gender, age, psycho-social problems, previous relationship history, anti-social peers, weak safety controls on SNS or computer, personality, mental health, rejection sensitivity.		
Behavioural risk factors E.g., deviant online behaviour, offline stalking, substance misuse, peer group, criminal behaviour		

Appendix E: Database hits

PsycINFO 23.10.17

Search identified: 2032

Relevant articles identified: 114

Included: 8

EMBASE 23.10.17

Search identified: 1231

Relevant articles identified: 43

Included: 5

Cochrane Library 23.10.17 (Cyberstalking)

Search identified: 0

Relevant articles identified: 0

Included: 0

Campbell library 23.10.17 (Cyberstalking)

Search identified: 0

Relevant articles identified: 0

Included: 0

MEDLINE (1946 to 23.10.17)

Search identified: 207

Relevant articles identified: 10

Included: 0

ProQuest databases 23.10.17

Search identified: 2830

Relevant articles identified: 92

Included: 8

Web of Science (1900-30.10.17)

Search identified: 704

Relevant articles identified: 47

Included: 2

Pub med 30.10.17

Search identified: 187

Relevant articles identified: 10

Included: 1

National Criminal Justice Reference Service Abstracts (NCJRS) 31.10.17

Search identified: 460

Relevant articles identified: 17

Included: 2

Home Office website 31.10.17

Search identified: 1

Relevant articles identified: 0

Included: 0

Ministry of Justice websites 31.10.17

Search identified: 35

Relevant articles identified: 0

Included: 0

Google Scholar 30.10.17

Search identified: 3610

Relevant articles identified: 86

Included: 11

Experts contacted 16.10.2017

- Bocij (did not respond)
- Dressing (did not respond)
- Leroy (did not respond)
- McKeon (responded and directed to University of Bedfordshire website)

National Centre for Cyberstalking Research (NCCR) 20.10.2017

Included: 0

Hand searches 16.10.2017

Included: 12

Cyber-psychology and behaviour journal 20.10.2017

Included: 0 additional references found

Appendix F: Quality assessment pro-forma template.

	Yes	No	?
Did the study address a clearly focused question/issue? <ul style="list-style-type: none"> The population studied The risk factors studied The outcomes considered Is it clear whether the study tried to detect a beneficial or harmful effect? 			
Is the research method (study design) appropriate for answering the question/objectives?			
Is the method of selection/recruitment of the subjects/cohort/cases clearly described?			
Could the way the sample was obtained introduce (selection) bias?			
Was the sample representative with regard to the population to which the findings will be referred (e.g., generalisable)?			
Was the sample size based on pre-study considerations of statistical power?			
Was the sample size adequate? E.g., 200 plus			
Was the study adequately piloted?			
Was a satisfactory response rate achieved?			
Are the measurements (questionnaires) likely to be valid and reliable?			
Was the statistical significance assessed?			
Was the analysis appropriate? E.g., not just using descriptive stats and percentages.			
Could there be confounding factors that haven't been accounted for? <ul style="list-style-type: none"> Genetic Environmental Socio-economic 			
Was cyberstalking measured objectively? <ul style="list-style-type: none"> Study uses a validated measure or if the author has made the measure have they subjected it to validity testing and reported adequate outcomes? Cyberstalking is well defined Uses more than one question to measure cyberstalking (e.g., not just "have you ever cyberstalked?")			
Do the results of this study fit with other available evidence?			
Was there a control group/population? <ul style="list-style-type: none"> Were the controls matched to the experimental population or randomly selected? Were there a sufficient number of controls selected? 			
Case control design & Cohort (Longitudinal) design Was there a follow up of subjects and if so was this adequate? <ul style="list-style-type: none"> Long enough period of time for good and bad effects to show themselves (3yrs?) Less the 40% attrition Same measures at exposure and follow-up 			

<ul style="list-style-type: none"> • Confounding factors considered at follow up 			
<p>Case control design & Cohort (Longitudinal) design</p> <p>Was the exposure and outcome accurately measured to minimise bias if applicable?</p> <ul style="list-style-type: none"> • Did they use objective measurements? • Do the measurements truly reflect what you want them to (have they been validated)? • Were all the subjects classified into exposure groups using the same procedure? • Were the same measures used at exposure and outcome 			
<p>Did the questions make sense, and could the participants in the sample understand them? E.g., Were any questions ambiguous or overly complicated?</p>			
<p>Was the method of distribution and administration of the questionnaire reported?</p>			

Appendix G: Facebook Questionnaire

1. In general, how frequently does your ex-partner(s) use his/her Facebook accounts?

Never	Occasionally	Frequently	All the time
1	2	3	4

2. Do you ever contact your ex-partner(s) via Facebook?

Never	Occasionally	Frequently	All the time
1	2	3	4

3. I have looked through my ex-partner's photos to see if I could find pictures of them with a new partner.

Never	Occasionally	Frequently	All the time
1	2	3	4

4. I have posted poetry or music lyrics in my status in reference to an ex-partner to taunt or hurt him/her.

Never	Occasionally	Frequently	All the time
1	2	3	4

5. I have updated my status just to make my ex-partner jealous.

Never	Occasionally	Frequently	All the time
1	2	3	4

6. I have posted poetry or music lyrics in my status in reference to my ex-partner to try and get back together.

Never	Occasionally	Frequently	All the time
1	2	3	4

7. I have written a post on my wall to taunt my ex-partner.

Never	Occasionally	Frequently	All the time
1	2	3	4

8. I have been blocked from my ex-partner's profile and asked them to un-block me.

Never	Occasionally	Frequently	All the time
1	2	3	4

9. I have created a false Facebook profile of my ex-partner to cause them problems.

Never	Occasionally	Frequently	All the time
1	2	3	4

10. I have used Facebook to spread false rumours about my ex-partner.

Never	Occasionally	Frequently	All the time
1	2	3	4

11. I have posted embarrassing photos of my ex-partner after we were no longer together.

Never	Occasionally	Frequently	All the time
1	2	3	4

12. I falsely changed my profile and/or status update to "in a relationship" just to make my ex-partner jealous.

Never	Occasionally	Frequently	All the time
1	2	3	4

13. I have written inappropriate or mean things about my ex's new partner on friends' walls for others to read.

Never	Occasionally	Frequently	All the time
1	2	3	4

14. I have posted a nasty or spiteful comment on a photo of my ex-partner.

Never	Occasionally	Frequently	All the time
1	2	3	4

Appendix H: Mating Effort Scale

Instructions

Please read each statement carefully. For each statement, please circle the response that best fits you.

The responses are:

-2 *Strongly disagree*

-1 *Disagree*

0 *Neither agree or disagree*

+1 *Agree*

+2 *Strongly agree*

- | | | |
|----|--|-----------------------|
| 1 | When I see an attractive person with their partner, I might try to get their attention | -2 / -1 / 0 / +1 / +2 |
| 2 | I would rather date several people at once than just one person | -2 / -1 / 0 / +1 / +2 |
| 3 | I think people find me naturally attractive | -2 / -1 / 0 / +1 / +2 |
| 4 | I like people more for their attractiveness than their companionship | -2 / -1 / 0 / +1 / +2 |
| 5 | I would get back at someone who looked at my partner in the wrong way | -2 / -1 / 0 / +1 / +2 |
| 6 | I would start a relationship with another person before ending one with my current one | -2 / -1 / 0 / +1 / +2 |
| 7 | My friends respect me because they know I am a little wild and crazy | -2 / -1 / 0 / +1 / +2 |
| 8 | If other people think I am attractive, they will stay away from my partner | -2 / -1 / 0 / +1 / +2 |
| 9 | Other people respect me because they know I have a lot of friends who would support me | -2 / -1 / 0 / +1 / +2 |
| 10 | If other people think I am tough, they will stay away from my partner | -2 / -1 / 0 / +1 / +2 |

Appendix I: Stalking Related Attitude Questionnaire

Instructions: Please indicate the degree to which each statement applies to your own attitudes on a response scale from 1 = *absolutely untrue* to 7 = *absolutely true*.

1. A man should be allowed to pursue a woman to a certain extent, if it is part of romance.
2. If a woman says no, even once, a man should leave her alone.
3. If a man and woman have been in a romantic relationship, the man has more right to pursue her than if they have never met.
4. It's normal for a woman to say no to a date at first because she doesn't want to seem too eager.
5. It's not stalking if you are trying to get your wife back.
6. A woman who dates a lot would be more likely to be stalked.
7. Saying no to a stalker will just provoke him.
8. A certain amount of repeated phoning and following is okay, even if a woman has said no.
9. The concept of stalking is just a fad.
10. Women find it flattering to be persistently pursued.
11. It's not really stalking if you know the person and they know you.
12. Staying in contact with someone shouldn't really be seen as a crime, if you are actually in love.
13. If a woman just ignored the man, he would eventually go away.
14. Stalking is a type of violence.
15. "If at first you don't succeed, try, try again", ideas like this make stalking acceptable.
16. Stalkers are a nuisance but they are not criminals.
17. If you were really in love with somebody, you wouldn't take no for an answer.
18. What one person may see as stalking, another may see as romantic.
19. Women often say one thing but mean another.
20. Stalking is just an extreme form of courtship.
21. If there is no actual violence, it shouldn't be a crime.
22. Some women actually want to be stalked; they see it as a compliment.
23. Victims of stalking are often women wanting revenge on their ex-boyfriends.
24. Repeatedly following someone, making phone calls and leaving gifts doesn't actually hurt anyone.
25. Certain types of women are more likely to be stalked.
26. Stalking should be dealt with in civil, not, criminal law.
27. A woman may be more likely to be stalked if she cannot clearly say no.
28. If a woman gives any encouragement, the man has a right to continue his pursuit.
29. Those who are upset by stalking are likely more sensitive than others.
30. Even if they were annoyed, most women would be at least a little flattered by stalking.
31. If someone continues to say nice things and give nice gifts, then stalking is far more acceptable.
32. Stranger stalking is the only real stalking.
33. Any person could be stalked.
34. Stalkers only continue because they get some sort of encouragement.

Appendix J: The Short Dark Triad

Instructions: Please indicate how much you agree with each of the following statements on a scale ranging from 1 (Strongly disagree) to 5(Strongly agree)

Machiavellianism

1. It's not wise to tell your secrets.
2. I like to use clever manipulation to get my way.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people to preserve your reputation.
8. Make sure your plans benefit yourself, not others.
9. Most people can be manipulated.

Narcissism

1. People see me as a natural leader.
2. I hate being the center of attention. (R)
3. Many group activities tend to be dull without me.
4. I know that I am special because everyone keeps telling me so.
5. I like to get acquainted with important people.
6. I feel embarrassed if someone compliments me. (R)
7. I have been compared to famous people.
8. I am an average person. (R)
9. I insist on getting the respect I deserve.

Psychopathy

1. I like to get revenge on authorities.
2. I avoid dangerous situations. (R)
3. Payback needs to be quick and nasty.
4. People often say I'm out of control.
5. It's true that I can be mean to others.
6. People who mess with me always regret it.
7. I have never gotten into trouble with the law. (R)
8. I enjoy having sex with people I hardly know
9. I'll say anything to get what I want.

Appendix K: Tinder motivations questionnaire

Instructions: For each item, please rate how you agree with the statement, on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

I use (have used) Tinder because...

1. It is fun
2. I enjoy browsing on Tinder
3. When I have nobody else to talk to
4. Everyone uses Tinder
5. My online Tinder connections understand me better than other people
6. To find out information about other users
7. To look at other people's pictures
8. To look at other people's profiles
9. It helps me to find a romantic relationship
10. I need someone to talk to
11. It is exciting
12. To cheer myself up
13. To relax
14. It makes me feel less alone
15. To talk to someone about sex
16. I find it easier to open up to others online than offline
17. To see who else uses the application
18. To contact a possible future romantic partner
19. It can be exhilarating
20. I feel that I communicate more easily online than offline
21. I am looking for an exciting relationship

22. To gain more self-confidence
23. For the kick
24. As a pleasant activity when I'm relaxing
25. To pass the time, especially when I'm bored
26. I feel better when I have a match on Tinder
27. To feel more attractive
28. I think it is funny
29. To exchange sexy pictures with someone
30. It is new
31. To flirt
32. To find out what other people think of me
33. It is entertaining
34. It is exciting to talk to a stranger
35. It helps me to establish new friendships
36. Out of habit
37. I feel less shy online than offline
38. I am looking for an one-night stand
39. So people can give me compliments about my appearance
40. To feel better about myself
41. To find a long-term relationship
42. It is an easy way to meet someone
43. It is cool
44. When I have nothing better to do
45. To find someone to have sex with
46. To find someone to be with

Appendix L: The HEXACO-60

Instructions: For each item, please rate how you agree with the statement, on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

- 1 ___ I would be quite bored by a visit to an art gallery.
- 2 ___ I plan ahead and organize things, to avoid scrambling at the last minute.
- 3 ___ I rarely hold a grudge, even against people who have badly wronged me.
- 4 ___ I feel reasonably satisfied with myself overall.
- 5 ___ I would feel afraid if I had to travel in bad weather conditions.
- 6 ___ I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
- 7 ___ I'm interested in learning about the history and politics of other countries.
- 8 ___ I often push myself very hard when trying to achieve a goal.
- 9 ___ People sometimes tell me that I am too critical of others.
- 10 ___ I rarely express my opinions in group meetings.
- 11 ___ I sometimes can't help worrying about little things.
- 12 ___ If I knew that I could never get caught, I would be willing to steal a million dollars.
- 13 ___ I would enjoy creating a work of art, such as a novel, a song, or a painting.
- 14 ___ When working on something, I don't pay much attention to small details.
- 15 ___ People sometimes tell me that I'm too stubborn.
- 16 ___ I prefer jobs that involve active social interaction to those that involve working alone.
- 17 ___ When I suffer from a painful experience, I need someone to make me feel comfortable.
- 18 ___ Having a lot of money is not especially important to me.
- 19 ___ I think that paying attention to radical ideas is a waste of time.
- 20 ___ I make decisions based on the feeling of the moment rather than on careful thought.
- 21 ___ People think of me as someone who has a quick temper.
- 22 ___ On most days, I feel cheerful and optimistic.
- 23 ___ I feel like crying when I see other people crying.
- 24 ___ I think that I am entitled to more respect than the average person is.
- 25 ___ If I had the opportunity, I would like to attend a classical music concert.
- 26 ___ When working, I sometimes have difficulties due to being disorganized.
- 27 ___ My attitude toward people who have treated me badly is "forgive and forget".
- 28 ___ I feel that I am an unpopular person.
- 29 ___ When it comes to physical danger, I am very fearful.
- 30 ___ If I want something from someone, I will laugh at that person's worst jokes.

- 31 __ I've never really enjoyed looking through an encyclopedia.
- 32 __ I do only the minimum amount of work needed to get by.
- 33 __ I tend to be lenient in judging other people.
- 34 __ In social situations, I'm usually the one who makes the first move.
- 35 __ I worry a lot less than most people do.
- 36 __ I would never accept a bribe, even if it were very large.
- 37 __ People have often told me that I have a good imagination.
- 38 __ I always try to be accurate in my work, even at the expense of time.
- 39 __ I am usually quite flexible in my opinions when people disagree with me.
- 40 __ The first thing that I always do in a new place is to make friends.
- 41 __ I can handle difficult situations without needing emotional support from anyone else.
- 42 __ I would get a lot of pleasure from owning expensive luxury goods.
- 43 __ I like people who have unconventional views.
- 44 __ I make a lot of mistakes because I don't think before I act.
- 45 __ Most people tend to get angry more quickly than I do.
- 46 __ Most people are more upbeat and dynamic than I generally am.
- 47 __ I feel strong emotions when someone close to me is going away for a long time.
- 48 __ I want people to know that I am an important person of high status.
- 49 __ I don't think of myself as the artistic or creative type.
- 50 __ People often call me a perfectionist.
- 51 __ Even when people make a lot of mistakes, I rarely say anything negative.
- 52 __ I sometimes feel that I am a worthless person.
- 53 __ Even in an emergency I wouldn't feel like panicking.
- 54 __ I wouldn't pretend to like someone just to get that person to do favors for me.
- 55 __ I find it boring to discuss philosophy.
- 56 __ I prefer to do whatever comes to mind, rather than stick to a plan.
- 57 __ When people tell me that I'm wrong, my first reaction is to argue with them.
- 58 __ When I'm in a group of people, I'm often the one who speaks on behalf of the group.
- 59 __ I remain unemotional even in situations where most people get very sentimental.
- 60 __ I'd be tempted to use counterfeit money, if I were sure I could get away with it.

Appendix M: Additional results tables Study 1.

Table A. Normality data for all independent variables

	Skewness	Kurtosis
ME	.23	.61
CovertProv	2.59	8.77
PublicHarass	5.83	39.80
Venting	9.30	92.50
Love	.88	.40
CasualSex	-.73	-.38
EaseCommun	-.46	-.25
SelfWorth	.20	-1.0
Thrill	.72	.05
Trendiness	.01	-.36
Machiavellianism	.30	-.13
Narcissism	.25	.21
Psychopathy	.68	.54
HonestyHumility	-.23	.10
Emotionality	-.27	-.30
Extraversion	-.27	.21
Agreeableness	-.40	.04
Openness	.03	-.41
Conscientiousness	-.19	-.04
Isn't serious	1.67	3.14
Romantic	.51	.13
VictimBlaming	.53	.10

Table B. Pearson correlation matrix of all study variables.

	ME	CP	PH	V	L	CS	E	SW	Th	Tr
Mating Effort										
Covert Provocation	.36***									
Public Harassment	.22**	.5***								
Venting	.15*	.5***	.77***							
Love	.03	.05	-.03	.04						
Casual Sex	-.31***	-.10	-.22**	-.19**	.16*					
Ease	-.12	-.10	-.10	-.07	.14*	.35***				
Self-Worth	-.27***	-.3***	-.21**	-.08	.22**	.26***	.4***			
Thrill	-.21**	-.08	-.12	-.03	.29***	.32***	.26***	.57***		
Trend	-.24**	-.2*	-.12	-.10	.01	.32***	.35***	.34***	.42***	
Machiavellianism	.45***	.23**	.05	.07	-.02	-.26**	-.20**	-.32**	-.26***	-.23**
Narcissism	.47***	.20**	.11	.09	-.04	-.19*	-.08	-.16	-.10	-.14
Psychopathy	.57***	.25***	.21**	.22**	.01	-.46***	-.18	-.21**	-.19*	-.22**
Honesty Humility	-.32***	-.10	-.11	-.14*	-.04	.27***	.2*8	.22**	.24**	.17*
Emotionality	-.12	.22**	.13*	.02	.06	.27***	-.06	-.25***	-.02	-.00.
Extraversion	.17*	.03	.01	-.03	-.08	.01	.25***	.11	-.05	-.11
Agreeableness	-.22**	-.24**	-.07	-.07	.05	.12	.11	.33***	.17*	.12

Conscientiousness	-.03***	-.07	-.05	-.11	-.03	.12	.08	-.03	.07	.06
Openness	.01	-.11	-.07	-.07	-.08	-.24**	.01	.05	-.10	.15*
Isn't serious	.27***	.22**	.12	.06	.21**	-.07	-.12	-.09	-.06	.03
Romantic	.29***	.22**	.04	-.04	.13*	-.05	-.14*	-.05	-.03	-.02
Victim Blaming	.22**	.19*	-.02	-.10	.08	-.06	-.19**	-.12	-.02	.05

(one-tailed) *p<.05. **p<.01. ***p<.001

Table B. Continued

	M	N	P	HH	Em	Ex	A	C	O	IS	R	VB
Machiavellianism												
Narcissism	.34***											
Psychopathy	.53***	.41***										
Honesty Humility	-.53***	-.27***	-.54***									
Emotionality	-.16*	-.16*	-.30***	.21**								
Extraversion	-.03	.43***	-.02	.06	-.23**							
Agreeableness	-.38***	-.21**	-.41***	.26**	-.06	.16*						
Conscientiousness	-.06	-.02	-.28***	.27***	.18*	.10	-.01					
Openness	.03	.12	.18*	.00.	-.10	.08	.15*	.12				
Isn't serious	.33***	.34***	.37***	-.30***	-.70	-.08	-.16*	-.18*	-.20**			

Romantic	.33***	.40***	.35***	-.33***	-.08	.01	-.14	-.07	-.13	.78	
Victim Blaming	.37***	.32***	.32***	-.31***	-.05	-.11	-.25**	-.07	-.12	.70***	.82***

(one-tailed) *p<.05. **p<.01. ***p<.00

Appendix N: Additional results tables Study 2

Table A. Overview of participants relevant for the study ($N = 69$).

	Bottom 20th Percentile: Score below 61	Top 80th percentile: Score above 100
Number of Males	12	17
Participant number	45, 63, 90, 91, 95, 105, 114, 127, 149, 153, 162, 166	8, 14, 23, 28, 31, 32, 35, 40, 48, 75, 78, 93, 101, 126, 138, 171, 172
Number of Females	23	17
Participant numbers	9, 15, 19, 21, 36, 43, 51, 61, 71, 83, 94, 97, 99, 104, 109, 113, 128, 137, 145, 146, 148, 157, 158	17, 33, 37, 41, 52, 58, 64, 67, 69, 73, 98, 120, 121, 133, 134, 143, 165
Total participants	35	34

Table B. Shapiro Wilk test of normality for all study variables.

	Q1	Q2	Q3.	Q4	Q5	Q6
Total SAQ	.86***	.88***	.92**	.74**	.85	.78***
Would						
Total SAQ	.90	.87	.67***	.89***	.87***	.91*
wouldn't						
Total SAQ	.88***	.88***	.88**	.88***	.88***	.88***
Negative	.70***	.38***	.19***	.41***	.36***	.33***
emotion						
Positive	.53***	.61***	.45***	.68***	.63***	.68***
emotion						
Social	.97**	.93**	.91***	.94**	.91***	.72***
Insight	.42***	.48***	.62***	.52***	.49***	.51***
Perception	.80***	.82***	.52***	.68***	.72***	.29***
Drives	.95**	.84***	.88***	.86***	.88***	.70***
Leisure	.52***	.47***	.31***	.52***	.27***	.34***
Covert	.63***	.63***	.63***	.63***	.63***	.63***
Provocation						
Public	.32***	.32***	.32***	.32***	.32***	.32***
Harassment						
Venting	.16***	.16***	.16***	.16***	.16***	.16***

Note, $p < .0001$ ***, $p < .001$ ** , $p < .01$ *

Table C. word category percentages for Q1 – Q6 grouped according to high stalking and low stalking attitude scores

		Neg	Pos	Social	Insight	Percept	Sexual	Power	Reward	Risk	Leisure
Q1	Low	1.02	4.66	40.05	5.17	7.50	0	3.15	2.12	0.2	3.44
	High	3.74	5.92	34.01	2.65	8.34	0.66	3.95	2.64	1.31	1.75
Q2	Low	1.94	3.22	29.4	3.82	8.17	0	5.90	2.61	0	4.36
	High	3.55	6.95	34.31	4.04	8.62	0	6.71	4.54	0.5	2.52
Q3	Low	2.28	2.95	40.28	6.59	4.09	0	1.82	1.82	0	2.27
	High	1.59	7.47	40.13	7.14	7.00	1.27	1.90	3.48	0	3.82
Q4	Low	3.45	9.94	36.01	5.21	4.14	0	2.52	1.23	2.22	3.91
	High	2.69	8.90	31.06	3.49	4.19	0	3.95	2.69	1.95	1.95
Q5	Low	3.55	5.20	32.01	2.66	6.43	0	3.94	2.78	1.84	0.78
	High	3.25	5.78	28.29	5.49	5.35	0.45	3.67	3.19	1.38	0.71
Q6	Low	2.59	14.12	26.56	2.59	6.55	0.52	1.04	0	0	5.60
	High	8.13	14.87	25.38	7.16	2.64	1.83	0.61	2.03	1.08	2.50

Table D1. Post hoc analysis for Q1, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	2.31	0.42	13.72	1.20.	<.0001
Neg emotion	.81	.21	15.22	1.16	<.0001
Insight	2.73	.79	13.3	1.52	<.0001
Percept	3.22	.48	12.82	1.10.	<.0001
Drives	9.36	.86	6.67	0.88	<.0001
Leisure	.95	.25	15.08	1.10.	<.0001

Table D2. Post hoc analysis for Q2, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	1.61	.35	12.10	1.09.	<.0001
Neg emotion	1.60	.56	12.11	1.08	<.0001
Insight	2.08	.58	11.62	1.24	<.0001
Percept	3.94	.55	9.76	1.16.	<.0001
Drives	11.49	1.22	2.22	1.34	=1.00
Leisure	1.33	.40	12.37	1.05.	<.0001

Table D3. Post hoc analysis for Q3, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	1.96	.59	13.48	1.48.	<.0001
Neg emotion	1.21	.75	14.23	1.67	<.0001
Insight	3.70	.82	11.73	1.61	<.0001
Percept	2.71	.71	12.73	1.47.	<.0001
Drives	9.27	1.10	6.17	1.08	<.0001
Leisure	1.28	.52	14.16	1.34	<.0001

Table D4. Post hoc analysis for Q4, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	5.41	.99	8.52	1.59.	<.0001
Neg emotion	1.31	.43	12.61	1.07	<.0001
Insight	3.04	.75	10.88	1.43	<.0001
Percept	1.94	.38	11.98	1.10	<.0001
Drives	8.89	1.03	5.03	.97	<.0001
Leisure	1.02	.28	12.90	1.00	<.0001

Table D5. Post hoc analysis for Q5, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	1.96	.43	12.74	1.30	<.0001
Neg emotion	1.48	.53	13.22	1.24	<.0001
Insight	1.87	.54	12.82	1.40	<.0001
Percept	2.95	.53	11.74	1.34	<.0001
Drives	9.05	1.06	5.65	1.07	<.0001
Leisure	.23	.11	14.47	1.25	<.0001

Table D6. Post hoc analysis for Q6, social processes word category differences with other word variables.

	Mean	Standard error	Mean difference	Standard error	Sig (<i>p</i>)
Pos emotion	4.63	.90	2.00	1.26	=1.00
Neg emotion	2.86	1.17	3.76	1.79	=.83
Insight	3.49	.96	3.13	1.60	=.92
Percept	1.01	.46	5.61	1.16	<.0001
Drives	4.49	.79	2.13	.88	=.56
Leisure	1.61	.65	5.02	1.35	<.02

Table E1. Independent samples t-test with bootstrapping comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q1.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	1.59(0.48)	3.04(0.70)	0.89	-3.15, 0.13	-1.71	67	0.09
Negative emotion	.53(0.27)	1.08(0.33)	-0.55	-1.44, 0.33	-1.28	64.11	0.21
Social	17.47(1.69)	14.59(1.53)	2.88	-1.55, 7.05	1.26	67	0.21
Insight	2.10(0.55)	3.36(1.50)	-1.26	-5.02, 1.25	-0.80	67	0.43
Percept	3.28(1.50)	3.16(0.65)	0.12	-1.71, 2.01	0.13	67	0.90
Drives	9.71(1.23)	9.00(1.21)	0.71	-2.78, 4.09	0.41	67	0.68
Leisure	1.15(0.39)	0.75(0.31)	0.40	-0.59, 1.36	0.79	67	0.43

Table E2. Independent samples t-test with bootstrapping comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q2.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	0.77(0.30)	2.44(0.64)	-1.66	-3.17, - 0.35	-2.36	47.14	<.05
Negative emotion	0.57(0.30)	2.61(1.09)	-2.04	-4.39, - 0.09	-1.81	38.02	.08
Social	12.43(1.41)	14.98(1.50)	-2.55	-6.47, 1.47	-1.24	67	.22
Insight	1.74(0.54)	2.43(1.05)	-0.69	-3.43, 1.55	-0.59	67	.56
Percept	4.08(0.75)	3.08(0.79)	0.27	-1.88, 2.53	0.25	67	.80
Drives	10.61(1.32)	12.36(2.07)	-1.75	-7.09, 2.86	-0.72	67	.48
Leisure	1.88(0.66)	0.78(0.45)	1.11	-0.32, 2.64	1.37	67	.17

Table E3. Independent samples t-test with bootstrapping comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q3.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	1.19(0.47)	2.72(1.09)	-1.53	-3.95, 0.49	-1.30	44.71	0.20
Negative emotion	1.82(1.43)	0.59(0.33)	1.23	-0.78, 4.77	0.82	67	0.41
Social	14.90(1.91)	15.98(1.98)	-1.08	-6.31, 3.82	-0.39	67	0.70

Insight	4.67(1.40)	2.74(0.82)	1.94	-1.19, 5.12	1.18	67	0.24
Percept	1.95(0.78)	3.47(1.19)	1.52	-4.49, 1.32	-1.08	67	0.29
Drives	7.36(1.29)	11.17(1.66)	-3.82	-8.07, 0.11	-1.82	67	0.07
Leisure	0.74(0.25)	1.82(1.02)	-1.08	-3.36, 0.48	-1.03	36.87	0.31

Table E4. Independent samples t-test with bootstrapping comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q4.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	6.31(1.68)	4.51(1.01)	1.79	-1.99, 6.14	0.91	67	0.37
Negative emotion	1.52(0.77)	1.09(0.38)	0.43	-0.99, 2.27	0.49	67	0.62
Social	16.12(1.60)	11.72(1.39)	4.40	0.06, 8.51	2.08	67	<0.05
Insight	1.45(0.40)	4.64(1.47)	-3.19	-6.76, - 0.46	-2.09	37.77	<0.05
Percept	2.27(0.57)	1.61(0.50)	0.66	-0.78, 2.12	0.88	67	0.38
Drives	9.18(1.29)	8.60(1.62)	0.58	-3.65, 4.44	0.28	67	0.78
Leisure	1.30(0.41)	0.74(0.38)	0.57	-0.56, 1.62	1.01	67	0.32

Table E5. Independent samples t-test comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q5.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	1.64(0.48)	2.27(0.71)	-0.63	-2.29, 0.99	-0.73	67	0.47
Negative emotion	2.00(0.98)	0.96(0.35)	1.04	-0.58, 3.39	0.98	67	0.33
Social	16.20(1.80)	13.19(1.71)	3.01	-1.86, 7.88	1.21	67	0.23
Insight	1.28(0.46)	2.46(0.98)	-1.18	-3.55, 0.90	-1.09	46.94	0.28
Percept	3.04(0.77)	2.87(0.74)	0.17	-1.90, 2.19	0.16	67	0.87
Drives	9.73(1.60)	8.37(1.37)	1.36	-2.49, 5.15	0.65	67	0.52
Leisure	0.18(0.14)	0.28(0.18)	-0.11	-0.55, 0.32	-0.49	67	0.63

Table E6. Independent samples t-test comparing the mean difference in word category between high and low stalking attitude (SA) groups for Q6.

	Mean (SE) low SA	Mean (SE) high SA	Mean difference	BCa 95% CI	t	df	p
Positive emotion	3.18(1.17)	6.07(1.37)	-2.89	-6.21, 0.57	-1.60	67	0.11
Negative emotion	1.71(1.45)	4.01(1.84)	-2.30	-7.02, 2.35	-0.99	67	0.33
Social	6.00(1.64)	7.24(1.70)	-1.24	-5.92, 3.55	-0.52	67	0.60
Insight	2.57(1.37)	4.41(1.33)	-1.84	-5.40, 1.96	-0.96	67	0.34
Percept	1.25(0.83)	0.78(0.38)	0.47	-1.03, 2.39	0.51	67	0.61
Drives	2.67(0.86)	6.30(1.33)	-3.63	-6.93, - 0.48	-0.28	56.81	<0.05
Leisure	1.61(0.80)	1.60(1.03)	0.003	-2.55, 2.40	0.003	67	1.00

Appendix O: Would/Wouldn't score guide

Score: Would = 2 and Wouldn't = 1

Would	Wouldn't
Giving a reason why they would engage in the behaviour (don't necessarily have to specifically say they would as long as they give a reason)	If they part answer the question e.g. talk about either Tinder or Facebook, but the answer implies they wouldn't engage in the behaviour.
Saying they would engage in the behaviour	Saying they wouldn't engage in the behaviour
If they part answer the question e.g. talk about Tinder or Facebook separately, but the answer implies they would engage in the behaviour.	Saying "I don't know"
One-word answers that are reasons for engaging in the behaviour e.g. sex, funny, revenge.	Saying they wouldn't engage in the behaviour but still giving possible reasons why someone else might engage in the behaviour.
Saying they would communicate but not search, or saying they would search but not communicate, or just specifying one of the two (searching or communicating)	Giving a reason why they wouldn't engage in the behaviour.

Appendix P: Participant email invitation



Dear potential participant,

I would like to invite you to take part in an online survey on attitudes towards romantic pursuit.

I am a postgraduate student on the Forensic Psychology Doctorate at the University of Nottingham and I am currently undertaking a research study, which forms part of my educational qualification. I am hoping to get as many responses to the survey as possible, from both males and females from a wide range of ethnic backgrounds and ages, so your participation is important.

You will be presented with two sections; the first section will collect demographic information, followed by the second part of the survey, which will consist of 6 short questionnaires, which you will need to answer as honestly as you can.

Participation is entirely voluntary. You will be assigned a participant ID number meaning that you will not be identified at any stage of the research process.

This research was approved by The DPAP Ethics Committee of Nottingham University, Reference number: 226

To access the information page and survey please click on the following hyperlink.

<https://nottingham.onlinesurveys.ac.uk/understanding-attitudes-of-relational-pursuit>

Please also consider sharing this participation message and study link to anyone in your network to assist me in recruiting participants.

Thank you for your time.

Best wishes,

Millie Fuller

Appendix Q: Facebook and Tinder participant invitation

"Hey,

I would like to invite you to take part in an online survey on attitudes towards romantic pursuit. This forms part of my educational qualification for the Forensic Psychology Doctorate at the University of Nottingham. I am hoping to get as many responses to the survey as possible, from both males and females, so your participation is important.

You will be presented with an online questionnaire that will take approximately 25 minutes. Participation is entirely voluntary and anonymous meaning you will not be identified at any stage of the research process.

This research was approved by The DPAP Ethics Committee of Nottingham University.

To access the information page and survey please click on the following hyperlink.

<https://nottingham.onlinesurveys.ac.uk/understanding-attitudes-of-relational-pursuit>

Please also consider sharing this message and study link to anyone in your network to assist me in recruiting participants.

Thanks!"

Appendix R: Demographic questions in online survey

What gender are you?

- Male
- Female

What is your age in years?

Your answer should be no more than 2 characters long.

How would you describe your ethnicity?

- White British
- White European (e.g. German, Hispanic, Greek)
- Black African
- Black Caribbean
- Other Black background
- Mixed Ethnic Background
- White Irish

What is your **current** relationship status?

- Single
- Married/Engaged
- Widowed
- In a Relationship
- Divorced
- Separated

How would you define your sexuality?

- Heterosexual
- Homosexual
- Asexual
- Other

How many years in education have you completed? * Required

Do you have an active (or past active) Facebook profile? * Required

Do you have a past or current mental health diagnosis? *Required*

Is English your first language?

- Yes
- No

Please select the option that is most applicable to yourself

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

	1- Cannot communicate in English at all	2	3	4	5	6	7	8	9	10- Can communicate in English fluently
How would you rate your fluency in English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have an active (or past active) Tinder profile? *Required*

- Yes
- No

Do you feel you have been victim of stalking related behaviours in the past?

- Yes
- No

Appendix S: Step-by-step thematic analysis

1. The data were already grouped into four categories (Male High SAQ, Male Low SAQ, Female High SAQ, and Female Low SAQ). In order to familiarise myself with the data I read through three times. Following this, I read through the data again and separated them further into smaller chunks so I could start semantic coding. Later, I began to realise the frames that I had devised were not as useful, as there were antinomies in the SAQ score's (i.e., high or low) and participants' written response. Thus, I made the decision to code the data as a whole for each question (Q1 and Q6) instead as within the pre-defined categories.
2. Next, I began semantic coding – mirroring and paraphrasing
3. Then I went back through the data and expand my semantic coding by developing latent codes (deeper meaning). Example of particular things I was looking for are:
 - Polarities – opposites
 - Antinomies – contradictions
 - Duality – wanting to see how good they are doing and how bad they are doing (no one particularly wants to see an ex doing well in these data)
4. Having collated a long list of codes from the data set I began sorting the different codes into potential themes. I paid attention to identify commonalities as well as differences in the codes and developed some themes, which included polarities to account for more of the data and codes (e.g., adolescent/adults, pos/neg). During this stage I was also linking in the relevant literature to aid with analysis.
5. This next stage involved me revisiting the themes to review them and narrow them down. I followed Patton's (1990) judging guide which stipulates that themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes. In doing this I read all the collated extracts for each theme, and considered whether they formed a coherent pattern and narrative. I then consider the validity of individual themes in relation to the data set.
6. Once I had a number of themes that I felt loosely captured the significant aspects of the data I began writing up a description of the themes, including specific extracts which I felt best represented the theme. I continued to link in relevant literature at this stage. It was then however I realized there were two overarching themes relating to the distinct ecological environments that existed within Facebook and Tinder which generate specific rules of engagement and that the themes that were generated related to each of these environments.

Appendix T: Thematic maps representing the relationships between themes and sub-themes.

