



Psychopathy and the Induction of Desire: Formulating and Testing an Evolutionary Hypothesis

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Abstract

The problems psychopathic individuals impose on society and in their interpersonal relationships can be held in stark contrast to reports of their appeal and sexual success in some of those relationships. In the current paper, we seek to contextualize this enigma by focusing on the interpersonal dynamics of psychopathic individuals in romantic encounters. We first formulate a plausible evolutionary function, the *sexual exploitation hypothesis*, that proposes psychopathy exhibits “special design” features for subverting female mate choice, facilitating the induction of favorable impressions and desire in prospective intimate relationships. We then test the hypothesis in two studies with university samples. Study 1 had young men assessed on psychopathy, social intelligence, and sociosexuality engage in a filmed dating interaction. Study 2 had young women view a subsample of the videos, rate them on desirability, and leave voice messages. Results show psychopathy was related to sociosexuality, specific factors of social intelligence, and generating higher desirability ratings from women after controlling for men’s physical attractiveness. Analyses involving comparisons of two men showed women’s ratings increased in favor of the more psychopathic man. Women’s voice pitch also changed, but only in response to different facets of psychopathy. The results provide preliminary support for the sexual exploitation hypothesis and suggest that more dynamic assessment of putative desirability in psychopathy may be required to capture its plausible special design features in prospective dating encounters.

Keywords Psychopathy · Intimate relationships · Evolutionary function · Dating · Female mate choice · Voice pitch

Introduction

Forming and maintaining relationships is a salient and preoccupying aspect of people’s lives. It involves recognizing and navigating intentions, attractions, patterns, desires, and other dynamic signals and interactions between sometimes very different individuals. We might think of this as a landscape of individuals in proximity that evaluate, assess, and choose each other in ongoing and in-the-moment circumstances. This landscape often elicits questions among its

participants: *How did those two end up together? What was it about him that she liked?* These more individual-level questions are also supplemented with questions about patterns: *Why do so many women like “that” kind of man? Why does acting “that” way get her so many dates?* These types of questions suggest that there may be particular rules that ensure success in forming relationships; some things work, others may not (Buss 2016; Moore 2010; Renninger et al. 2004). Having a disposition that makes you more inclined to exhibit the behaviors that work *with* the rules governing romantic relationships would be beneficial in forming (and potentially keeping) these relationships—in addition to attractiveness, these may include being sincere, honest, interesting, and having confidence, success, and resources (Buss 2016; Buss and Barnes 1986; Moore 2010). But what about faking it? Having a disposition that is deceptively attractive and plays to the rules of courtship, flirting, and bonding may also be useful, provided that it is done convincingly. One disposition that may fit this description of faking attractive qualities of a prospective romantic partner that we explore in this paper is *psychopathy*.

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The Construct of Psychopathy

Psychopathy is a superordinate personality structure that emerges from the co-occurrence of dimensional and distinct traits including dispositional (e.g., manipulativeness, boldness), emotional (e.g., shallow affect, meanness), and behavioral (e.g., disinhibition, antisociality) traits (Hare 2003; Patrick 2018). Of two prominent models of psychopathy, a triarchic model emphasizes three trait dimensions (boldness, meanness, and disinhibition; Patrick et al. 2009), while a four-facet model emphasizes four trait dimensions (Hare et al. 2018; Neal and Sellbom 2012; Paulhus et al. 2016). The four dimensions of this latter model include *interpersonal* traits of being manipulative, deceitful, and showing shameless self-enhancement; *affective* traits of having shallow social emotional experiences, exhibiting callousness, and having a lack of concern for others; *lifestyle* traits of showing a pattern of disinhibition, sensation seeking, and general impulsivity and irresponsibility; and *antisocial* traits of breaking rules, having a disregard for authority, and exhibiting poor anger controls. Although individuals may exhibit some traits but not others, having more of the traits conceptually results in a more psychopathic individual (Hare 2003; Patrick et al. 2009). In this paper, we primarily focus on the overall psychopathy construct, which is emphasized in the four-facet model. The unique boldness factor of the triarchic model (while not precisely measured in the four-facet model) may also share conceptual features across these four dimensions (Patrick 2018; Patrick et al. 2009).

The research question we explore in this paper is whether these psychopathic trait dimensions collectively embodied in human men predispose and enable them to behave favorably in prospective dating encounters. We wonder if in the landscape of individuals seeking a partner whether there are sexual and romantic “sneakers” or “mimics” who display not just a mask of sanity (Cleckley 1976), but an appealing mask that deceptively displays attractive qualities desirable in the marketplace of relationships. The focus of this research question on psychopathic traits in men is informed by an evolutionary science framework.

Evolutionary Science and Psychopathy

Previous research has sought to conceptualize psychopathy from an evolutionary perspective (reviewed in Glenn et al. 2011). This research has illuminated how psychopathy may represent an evolved suite of psychological traits that indicate possible evolutionary benefits coming from cheating (e.g., Book and Quinsey 2004; Harpending and Sobus 1987; Mealey 1995), exhibiting a fast life history strategy (e.g., Book et al. 2019; Jonason et al. 2009), and the facilitation of an alternative mating strategy (e.g., Harris et al. 2007; MacMillan and Kofoed 1984; Wiebe 2004). Much of this

research has largely examined how psychopathy fits in to broader- (e.g., frequency-dependent selection) and middle-level (e.g., life history theory) evolutionary explanations and has focused less on how a plausible function of psychopathy may be examined from more specific-level approaches (for a review of the hierarchical organization of evolutionary theories see Buss 1995; Ketelaar and Ellis 2000; Simpson and Campbell 2016). While the different levels of explanation are complimentary, they offer distinct perspectives that help in understanding the survival value, or function, of traits that explain their existence (Tinbergen 1963).

Research that has examined more specific-level explanations suggest that the psychopathy construct may function to obtain benefits through precocious and coercive sex (Harris et al. 2007; Wiebe 2004) and through acquiring reproductively relevant resources from a combination of cheating and aggressing (Book et al. 2019). These perspectives suggest plausible benefits of psychopathy may come from social and/or sexual exploitation of others. There may, however, be numerous examples of adaptations for exploitation (Buss and Duntley 2008). What might be the function of psychopathy as a constellation of traits that differentiates it from other examples of exploitation? We suggest that while previous research points toward a function of psychopathy, it would be beneficial to extend this research by proposing a precise and *specific* function of the traits of psychopathy that differentiates it and may clarify its associated *special design* features (Krupp et al. 2012). Among other things, this may require using an adaptationist approach that seeks to identify a trait’s plausible function, facilitating a focus on its design features and the selection pressures that may have produced them (Andrews et al. 2002; Williams 1966).

From an evolutionary perspective, why do the dimensional traits in psychopathy coalesce, and does this indicate a precise function? Do they facilitate a specific and beneficial effect on reproductive success that explains why they exist? In using existing evolutionary explanations of psychopathy as a foundation, we aim to extend an understanding of psychopathy at a *specific*-level evolutionary explanation in (1) proposing a precise and differentiating function of psychopathy as an exploitative strategy, (2) focusing on special design features based on this proposed function that can be tested, and (3) tracing plausible selection pressures that may have given rise to such a function of psychopathy. The combination of these three aims provides a novel approach while also being consistent with previous research as we seek to extend how psychopathy may be differentiated as an evolved constellation of traits.

In the following sections, we outline plausible selection pressures proposed to be relevant in our species’ past that may have led to the evolution of psychopathy, particularly in men (i.e., sexual access, skewness in male reproductive success, mate choice preferences). We review each of these selection pressures for how they relate to psychopathy. The

outcome of this literature review leads us to propose a novel hypothesis of the precise function of psychopathy (i.e., the sexual exploitation hypothesis), which we then provide a preliminary test of in two empirical studies using a multimethod, multimeasure approach (Simpson and Campbell 2016).

Sexual Behavior and Psychopathy

Assessing for psychopathy typically requires a consideration of sexual behavior and relationships (e.g., Cleckley 1976; Forth et al. 2003; Hare 2003). Cleckley's criteria includes a "pathologic egocentricity and incapacity for love" (p. 370) and "an impersonal, trivial, and poorly integrated sex life" (p. 387). Hare's *Psychopathy Checklist-Revised* (PCL-R; Hare 2003) includes items on sexual promiscuity and many short-term marital relationships. Thus, a core part of the psychopathy construct may include impersonal and superfluous sexual relationships (Harris et al. 2007), a finding that nonevolutionary perspectives of psychopathy may have difficulty framing theoretically.

Anecdotally, when interviewed, many criminal psychopaths refer to sexual opportunism and enjoyment of many sexual relationships (Cleckley 1976; Fairless 2018; Hare 1993; Kiehl 2014). In community samples, qualitative work with relationship victims of psychopaths shows sexual infidelity (even with friends of the partner) appears common (Brown 2009; Kirkman 2005; Leedom et al. 2012). In students, psychopathy may be associated with sexual self-esteem (Smith et al. 2019) and, in men but not women, confidence and body satisfaction (Visser et al. 2010). Additionally, students with more psychopathic traits also show preoccupation with sex and are more likely to carry out their fantasies by acting on them (Visser et al. 2015).

The sexual behavior of individuals with more psychopathic traits tends to also be precocious, with earlier age of sex being found in a variety of samples including nonpsychiatric offenders (Smith and Newman 1990), sex offenders (Harris et al. 2007), community adults (Seto et al. 1997), forensic psychiatric patients (Cleckley 1976; Hare 1993), and male students (Visser et al. 2010). In addition, psychopathic traits are associated with having more sexual partners in student samples (Jonason et al. 2009), more one-night stands in community men (Seto et al. 1997), and number of times successfully poaching other mates and themselves being poached (Jonason et al. 2010b). Although not required to constitute adaptation, it seems individuals high in psychopathic traits are also *consciously* motivated to have short-term sexual contacts, reporting an openness to sexual relationships without attachment (Jonason et al. 2010a), shorter time known before having sex (Seto et al. 1997), and a desire for short-term sexual relations (Jonason et al. 2009).

These observations of many sexual partners, loose commitment, and precocious sexuality have potential positive

consequences for reproductive success and, thus, may reflect part of the special design features of psychopathy. But sexual behavior may not be the only potential design feature of psychopathy. Its deceptive manifestation (e.g., Jones 2014) may also suggest that these traits may be performing a specific function.

Deception and Psychopathy

Evolutionary perspectives of mate acquisition suggest it is normative to use subtle forms of exaggeration to make oneself look favorable in attracting mates (Tooke and Camire 1991). Taken to the extreme, however, some dispositions may reflect stronger investment in deceptive mate attraction tactics, which we propose is the case for psychopathy.¹ Some of the earliest clinical observations on psychopathic patients reveal a consistent deceptive pattern of behavior (Cleckley 1976). Other clinical and forensic observations reliably substantiate these patterns (e.g., Hare 1993; Kiehl 2014). Not only does the assessment of psychopathy typically include items that directly tap deception (e.g., lying, fraud), but the entire disposition of psychopathy may embody a deceptive orientation (Jones 2014). For example, the grandiosity shown in psychopathy can reflect the tendency to portray oneself inaccurately or exaggeratedly. Comparably, a combination of superficial charm, parasitic orientation, and lacking goals (traits underlying psychopathy) hint toward a chronic use of positive self-presentation despite ongoing failures in meeting goals and independence—a deceptive mismatch between what these individuals think of themselves and what they have (not) accomplished.

Subtle but consequential forms of deception also seem prevalent in psychopathy. In students, studies have found psychopathic traits increase with an ability to deceptively enhance one's baseline attractiveness (Holtzman and Strube 2012), lie while inhibiting emotional "leakage" (Porter et al. 2011), and be rated as more genuine after feigning remorse (Book et al. 2015). These studies suggest a tendency in psychopathy toward deception in interpersonally meaningful contexts of emotion expression and physical attractiveness. These effects of successful deception may also reflect special design features that are part of the function of psychopathy. Furthermore, psychopathic deception may reflect the deceptive tactics often used in men's mating effort (e.g., Ellis 2005; Tooke and Camire 1991).

Men's Phenotypes and Psychopathy

A finding across several species is that males often have higher variance in reproductive success compared to females

¹ This idea is supported in the work by Ellis (2005), who argued that men's mating strategies may vary from the extremes of serious investment in mate-provisioning tactics to severe deceptive tactics.

(Daly and Wilson 1988; Symons 1979). This asymmetry leads to selection pressures acting differently on males compared to females (Bateman 1948), which may create extreme reproductive strategies in males to be counted among the few with preferential access to females; reinforcing a “do or die” mentality. Examples across species demonstrate some elaborate mate acquisition strategies of males, including in nonhuman primates (Smuts and Smuts 1993), birds (Andersson 1989; Simmons 1988), and humans (Daly and Wilson 1988).

These observations may support the idea that psychopathy—an elaborate phenotypic pattern—underlies a “solution” to human male-specific selection pressures as well (Jonason et al. 2017; Wiebe 2004). In support of this male-biased tendency, psychopathic traits typically manifest to a greater degree in men than women across diverse samples (e.g., Cale and Lilienfeld 2002; Coid and Yang 2008; Hare 2003; Neumann et al. 2012) with some indication of differential predictive validity (Verona and Vitale 2018) and relationships to external correlates (Efferson and Glenn 2018; Visser et al. 2010). These differences may indicate that the construct has specific consequences and effects across the sexes, with the manifestation of psychopathic traits in *men* potentially providing a solution to the adaptive problems of access to mates and male reproductive variance in ensuring reproduction. Although the beneficial effects of psychopathy may be incurred by women (e.g., Harpending and Sobus 1987; Mealey 1995), these benefits may follow from a distinct phenotypic pattern better conceptualized as borderline personality (Sprague et al. 2012). Additionally, women with psychopathic traits may entail larger reproductive costs that prevented selection from shaping these features into their reproductive strategies (Jonason and Lavertu 2017). Thus, along with others (Jonason et al. 2017), we argue that psychopathy is likelier to have evolved as a function to solve male-specific selection pressures of acquiring access to mates and overcoming high male reproductive variance (Bateman 1948).

Women’s Mate Preferences and Psychopathy

Along with these adaptive problems faced by ancestral men, the presence of women’s mate choice may have been a possible selection pressure that influenced psychopathy being shaped into men’s phenotypes (see also Ellis 2005). Is there a match between what women report desiring and what psychopathic men exhibit during their interactions? What women look for in a male partner varies from culture to culture and person to person, but there may also be some continuity in the attractive qualities that heterosexual women report desiring in a partner, which include having resources, status, and power (Buss 2016; Buss et al. 1990). Individuals higher in psychopathy are more likely to aspire to power (but not achievement), financial success, and acquiring material possessions (Glenn et al. 2017), demonstrating how motivations of psychopathic

individuals may match, albeit deceptively and superficially, these preferences. Supporting this directly, psychopathy may lead men (but not women) to exhibit more self-promoting mate attraction behaviors that are rated as desirable by the opposite sex (Monteiro et al. 2017).

While women may value power and resources in mates, honesty, kindness, and sincerity are also highly valued (Buss 2016), as well as social excitement and adventurousness (Buss and Barnes 1986; Harasymchuk and Fehr 2012). Psychopathic individuals seem enigmatically able to make positive first impressions (e.g., Babiak and Hare 2006), often appearing honest and sincere as well as interesting and exciting as gathered in clinical (e.g., Cleckley 1976; Hare 1993) and biographical accounts (Kirkman 2005; Leedom et al. 2012). Psychopathic individuals may also appear kind and commitment-focused at the onset of relationships, which may include using *love-bombing*, a tactic that involves excessively showering others with love through flattery, sweet talk, and maintaining constant communication (e.g., Brown 2009; Deck 2017; Leedom et al. 2012). Thus, there may be a match between women’s mate choice preferences and the *effects* generated from having more psychopathic traits in men. The mate choice preferences of women, including themes of industriousness and success as well as honesty, sincerity, and adventurousness, may be deceptively mimicked in the manifestation of a psychopathic male. That is, psychopathic traits in men may lead to a greater tendency (and perhaps ability) to display qualities of mate choice preferences, however briefly, deceptively, and ostentatiously, during prospective dating encounters.

An important consideration involves *how* women indicate their preference for a mate. Some studies have used self-report (e.g., Buss and Barnes 1986; Regan and Berscheid 1997), while others have used physiological measures such as pupil dilation (Zuckerman 1971) or voice pitch (Fraccaro et al. 2011). For measures of voice pitch, women have been shown to speak in a higher voice pitch to men they find more attractive (Fraccaro et al. 2011), which may be a result of men’s greater preference for high-pitch voices in women (Feinberg et al. 2008), a preference that extends cross-culturally (Apicella and Feinberg 2009).

Sexual Exploitation Hypothesis and the Current Studies

Based on this review of relevant areas that may indicate selection pressures acting on the evolution of psychopathy (e.g., sexual promiscuity and precocity, deceptive mate acquisition, male-biased manifestation, matching female mate choice preferences), we propose that psychopathy has evolved to perform a precise function in response to these selection pressures. The *sexual exploitation hypothesis of psychopathy* proposes that the function of psychopathy is to optimize a male to ostentatiously and deceptively mimic the display of female mate

choice preferences, facilitating in men the capacity to enact and embody what is typically attractive and desirable to women during dynamic in-the-moment social and prospective dating encounters that lead to sexual opportunities and success. This suggests that psychopathy involves enacting interpersonal, affective, and behavioral attributes that cumulatively have the beneficial effect in men of increasing exposure to prospective mates, raising one's attractiveness to women, being chosen as a mate, and the subsequent reproductive and fertilization success that may follow.²

This proposed function is complimentary and consistent with previous research examining psychopathy as cheating, fast life history, and alternative mating strategies. However, in using an adaptationist framework, the sexual exploitation hypothesis may add precision to the function implied in these perspectives and suggests how psychopathy may have been selected *for this specific function*, making it differentiable from other cheating, fast life, and alternative mating strategies. While psychopathy may be a cheating strategy, the sexual exploitation hypothesis suggests it is a cheating strategy because it exploits female mate choice. While psychopathy may be a fast life history strategy, the sexual exploitation hypothesis suggests it fits a “fast” strategy because it orients men to acquire sexual encounters at the expense of the future. While psychopathy may represent an alternative mating strategy, the sexual exploitation hypothesis suggests it is an alternative strategy in men because it successfully plays to female mate choice standards. The sexual exploitation hypothesis, therefore, can be integrated across the levels of evolutionary explanation regarding psychopathy (Simpson and Campbell 2016).

Another point to clarify is that the “sexual exploitation” focus of the current hypothesis presumes that there need not be social benefits that come from enacting this function. This suggests psychopathy may not be adaptive because it leads to legitimately acquiring reproductively relevant social and material resources, which influences reproductive success, but rather that it is adaptive because it expedites reproduction through increasing sexual encounters in men; hence, it is presumed to facilitate acquiring reproductively relevant *sexual* resources (e.g., direct access to mates), which may include pretending to have social resources. Acquiring sexual resources through manipulating female mate choice preferences, which usually predict reproductive benefits for women, may be the function of psychopathy in men. Displaying-but-not-embodying mate choice preferences then marks the “sexual exploitation” aspect of psychopathy from this perspective. While psychopathy may sexually exploit in other ways (e.g., Harris et al. 2007; Wiebe 2004), we propose that its evolutionary history was shaped primarily by exploiting and subverting female mate *choice* in prospective romantic encounters rather

than by facilitating sexual coercion per se. In addition to formulating this hypothesis, we aim to provide a preliminary test of the proposed function as well.

The current paper indirectly (study 1) and directly (study 2) tests the sexual exploitation hypothesis in university samples. Study 1 examines some expected correlates of psychopathy if the sexual exploitation hypothesis is to be supported, including sufficient social intelligence and increased sexual behavior. We also conduct exploratory analyses to examine how each of the dimensions of psychopathy may contribute to these correlates. Study 2 then assesses the sexual exploitation hypothesis more directly by testing expected special design features in a dating encounter. One special design feature of psychopathy we examine in this study is the ability to favorably influence women's preferences after having women merely observe their interpersonal “gestalt” in a prospective dating encounter. We assess women's preferences through their subjective ratings and a sample of their voice pitch after having watched men in recorded dating interactions. Higher ratings and voice pitch received by men with more psychopathic traits would constitute support of psychopathy successfully matching what women find desirable (i.e., their mate preference) in a dating encounter, which would support the sexual exploitation hypothesis.

Study 1: Method

Participants

Participants were young men ($N = 46$) recruited from a Canadian university with an age range of 17 to 25 ($M = 18.71$, $SD = 1.46$). This matched the sample size from previous studies using video-recorded stimuli and psychopathy (Book et al. 2015). A broad range of ethnicities were represented in this sample (52% Caucasian, 13% Black, 11% Southeast Asian, 6.5% South Asian, 6.5% multiple, 4.3% East Asian and Arab, and 2.2% Latin American). Most participants reported being heterosexual (89%), followed by bisexual (4%), no classification (4%), and gay (3%). A choice between \$20 and course credit was offered for participation in this study.

Materials

Digital Camera Photographs

A Canon digital camera was used to take photographs of participants from the waist up. Photographs were shown to individuals ($N = 11$) blind to the study who rated them on physical attractiveness (see “Study 2: Method”). Ratings were used to match participants on attractiveness in study 2.

² There may be an additional factor of having an effect on some women but not others (e.g., Watts et al. 2019).

Video Recording Camera

A GoPro HERO3 camera was used to record audio–visual interactions during a dating scenario lasting approximately 2 min. These videos depict only the participant in the frame and were the videos shown to participants in study 2.

Measures

Psychopathy

Psychopathic traits were assessed with the Self-Report Psychopathy scale (SRP 4; Paulhus et al. 2016), a 64-item measure designed for use in nonoffender populations that captures the four-facet structure of psychopathy (Hare et al. 2018). Each item is rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses on the SRP 4 can be summed (ranging from 64 to 320), where higher scores represent a greater manifestation of psychopathic traits. The four facets include interpersonal (e.g., “I would get a kick out of ‘scamming’ someone”), affective (e.g., “People sometimes say that I’m cold-hearted”), lifestyle (e.g., “I easily get bored”), and antisocial (e.g., “I purposely tried to hit someone with the vehicle I was driving”). The internal consistency reliability in student samples is approximately .92 for the full scale and reliabilities of the facets range from .76 to .83. Test–retest estimates for students are .82, and test–retest of the facet scores ranges from .70 to .92. SRP 4 facets correlate with PCL–R facets in offenders, ranging from .36 to .77, suggesting its convergence with the PCL–R structure (Paulhus et al. 2016).

Social Intelligence

Social intelligence was measured using the Tromsø Social Intelligence Scale (TSIS; Silvera et al. 2001). This is a 21-item self-report measure capturing a three-factor structure of social intelligence, with responses ranging from 1 (*describes me extremely poorly*) to 7 (*describes me extremely well*). The three factors include social information processing (e.g., “I can predict other peoples’ behavior”), social skills (e.g., “I am good at getting on good terms with new people”), and social awareness (e.g., “I have often hurt others without realizing it”). The factors are significantly and moderately correlated with each other ($r_s = .16$ to $.39$), the reliabilities range from .72 to .86 (Silvera et al. 2001), and its test–retest is .90 (Grieve and Mahar 2013).

Sociosexual Orientation

Sociosexual orientation was measured using the Revised Sociosexual Orientation Inventory (Penke and Asendorpf 2008), which assesses an individual’s tendency toward unrestricted sexual relationships. The scale separates into three

distinct but correlated factors—Behavior, Attitude, and Desire—which allows for assessing each component separately or as a composite measure of Total Sociosexuality. The Behavior subscale assesses number of sexual partners in different contexts, the Attitude subscale assesses an uncommitted attitude toward open and varied sexual partners, and the Desire subscale items assess extent of sexual fantasizing. All subscales use a 9-point Likert response option format. Reliabilities of the subscales range from .76 to .87. The current study used a modified version of the SOI–R with an added question about age of first sexual intercourse.

Procedure

Participants were first recruited via email after taking part in a university-wide mass testing procedure. The current study procedure was embedded in a broader data collection session that involved other components that are reported elsewhere (manuscript in prep). The first phase had participants video-recorded in a dating scenario with a single female confederate who was unknown to participants and introduced as a female volunteer for the study. Participants were told that the dating scenario was being conducted to capture individuals’ interpersonal styles during dating contexts and would be rated in a follow-up study by female students. The female confederate started the recorded dating scenario with one of two scripted questions, counter-balanced across participants (“What do you like to do on a first date?” or “What do you think is most important in a relationship?”). Following this, no other scripted instructions were given, and the conversation flowed naturally between the participant and the female confederate for up to 2 min but no less than a minute and a half.

The second phase relevant to this study had participants photographed from the waist up against a clear white background with a neutral facial expression. These photographs allowed for independent raters to assess their attractiveness (see “Study 2: Method”). The last phase had participants complete self-report measures assessing psychopathy (SRP 4), social intelligence (TSIS), sociosexuality (SOI–R), and demographics (age, sexual orientation, ethnicity).

Study 1: Results³

The descriptive statistics and correlation matrix of variables are presented in Table 1. Examination of z -scores revealed one outlier for SOI-Behavior (z -score = 4.46). This outlier was Winsorized⁴ to bring it within range while maintaining its rank

³ Reproducible scripts are available in the [Supplementary Material](#) for both planned and exploratory analyses conducted and for both studies.

⁴ Winsorized procedure was giving the outlier a score of $(M \pm SD * 3)$ to bring the rank-ordered case within range for that variable (i.e., SOI-Behavior).

Table 1 Psychometric properties and correlations between study 1 variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Total psychopathy	–	.78***	.67***	.82***	.65***	.37*	.45**	–.16	.34*	.58***	.28	.53***
2. Interpersonal		–	.40**	.53***	.30*	.51***	.37*	–.24	.18	.52***	.29*	.44**
3. Affective			–	.33*	.19	.26	.39***	–.02	.04	.32*	–.06	.15
4. Lifestyle				–	.53***	.10	.37*	–.09	.43**	.49**	.28	.52***
5. Antisocial					–	.21	.16	–.11	.36*	.34*	.33*	.45**
6. Social processing						–	.28	.12	–.04	.16	.21	.15
7. Social skills							–	.01	.34*	.41**	.20	.41**
8. Social awareness								–	–.09	.06	–.16	–.07
9. SOI-Behavior [†]									–	.51***	.26	.75***
10. SOI-Attitude										–	.40**	.85***
11. SOI-Desire											–	.71***
12. Total sociosexuality												–
<i>M</i> (SD)	161.63 (24.97)	44.96 (9.13)	41.83 (8.60)	48.59 (9.12)	26.26 (7.05)	36.83 (6.22)	32.33 (7.60)	32.00 (6.01)	7.22 (6.45)	15.74 (6.88)	15.91 (5.90)	38.65 (14.21)
<i>α</i>	.89	.81	.78	.77	.72	.87	.81	.60	.96	.88	.84	.87
Skewness	–.30	.08	–.33	–.49	.19	–.32	–.15	–.39	1.75 [‡]	–.39	–.01	.25
Kurtosis	–.04	–.75	–.08	–.59	–1.01	.12	–1.21	.23	2.72 [‡]	–.82	–.68	.19

Note. *N* = 46

SOI = Sociosexual Orientation Inventory–Revised (Penke and Asendorpf 2008)

[‡] Values denote skewness and kurtosis after Winsorizing outlier for this variable. Before Winsorizing, the values were 2.52 and 8.04, respectively

[†] Correlation coefficients using this variable are with Winsorized outlier

p* < .05; *p* < .01; ****p* < .001

order. All variables except SOI-Behavior met the assumption of normality based on a skewness and kurtosis values within ± 2 . Scale reliabilities were mostly acceptable (see Table 1).

Importantly for the sexual exploitation hypothesis, total psychopathy was significantly related to most variables (except Social Awareness and SOI-Desire). All facets of psychopathy related significantly to SOI-Attitude, while SOI-Behavior was only significantly related to Lifestyle and Antisocial traits. Additionally, all facets of psychopathy except for the Affective traits showed significant associations with Total Sociosexuality, suggesting a clear link between psychopathic traits and overall sociosexuality. Regarding social intelligence, Interpersonal traits had the strongest relationship to Social Information Processing, while Social Skills was similarly related to all facets except Antisocial traits. Post hoc power analyses showed that with our small sample size and using a two-tailed test, our power to detect a medium effect size ($r = .30$) was .54 and to detect a large effect size ($r = .50$) was .95. Thus, the lower magnitude correlations were somewhat underpowered, while the higher magnitude correlations had sufficient power.

Of those reporting having sex ($n = 33$), psychopathy was not related to precocity, $r(33) = -.11$, $p = .53$, although it was in the expected direction. An independent-samples t test was also conducted and showed men who reported having sex had higher levels of psychopathic traits ($M = 169.33$, $SD = 22.65$) compared to those reporting not having sex ($M = 142.08$, $SD = 19.84$), $t(44) = 3.80$, $p < .001$, 95% CI mean difference [12.79, 41.72]. Despite the unequal sample sizes, Levene's test indicated equal variances between the groups ($F = .37$, $p = .55$). However, the unequal sample sizes indicate a need for caution in interpreting these results, requiring further replication with larger and more equal groups.⁵

Study 1: Discussion

This study assessed expected relationships predicted by the sexual exploitation hypothesis between measures of psychopathic traits, social intelligence, and sexual behavior in a sample of young men. That overall psychopathy was related to factors of social intelligence and sexual behavior indicates support for the hypothesis, albeit modestly.

The findings also support other research suggesting that psychopathy may be related to social navigation skills (Book et al. 2015; Sacco et al. 2016). Not surprisingly, the interpersonal traits (i.e., grandiosity, deceitfulness) of psychopathy

were most strongly related to social processing skills. Thus, individuals with these traits may spend more time investing in social processing capacities such as reading how others react during social interactions and understanding others' motives (Silvera et al. 2001). Social skills, however, were related to all facets except antisocial traits, which themselves did not relate to any factor of social intelligence. This suggests that social skills may be a central correlate of most of the facets of psychopathy (including boldness), and future research should examine this possibility with more objective measures of both demonstrating social skills and being described as having social skills by others. One possibility is to have third-party viewers blind to psychopathy scores rate social skills of individuals varying on psychopathy during social interactions.

These findings contrast slightly from Sacco et al. (2016), who reported that the behavioral aspects of psychopathy were negatively related to social intelligence, whereas our findings suggest positive effect sizes for all features of psychopathy and social information processing and social skills specifically. Sacco et al. (2016) did not report associations with the separate factors of social intelligence but opted for a total social intelligence score, precluding definitive comparisons across these studies. In line with the authors of the TSIS (Silvera et al. 2001), we suggest that future research should assess the relationship between psychopathy and the factors of social intelligence, as opposed to a total score.

As expected, total psychopathy was most strongly related to total sociosexuality, consistent with previous findings (e.g., Kastner and Sellbom 2012; Koladich and Atkinson 2016; Mouilso and Calhoun 2012). That three of the four facets correlated with total sociosexuality and that all facets correlated with the attitude subscale suggest that the components making up psychopathy themselves may influence and/or reflect a loosely bonded, uncommitted perspective to relationships. We did not, however, find that total psychopathy associated with precocious sexuality as indicated elsewhere (Harris et al. 2007; Smith and Newman 1990; Visser et al. 2010). The current study may not have been a good test of this because of its small sample size and the limited age range of participants. Future research should explore various age ranges to examine this putative relationship between psychopathy and precocious sexuality in university men. There were also some (albeit preliminary and modest) results suggesting psychopathy may have been higher in men that had sex compared to those that had not, which suggests that psychopathy may influence the motivation to seek out sexual activity. Further research should explore what may motivate individuals with more psychopathic traits to have sex compared to those with fewer psychopathic traits (e.g., Kastner and Sellbom 2012; Visser et al. 2015).

In sum, the results are in line with the sexual exploitation hypothesis that psychopathy may function to effectively enter sexual relationships, however tenuous and superfluous those

⁵ To address the unequal sample sizes, we also randomly selected 13 of the 33 men who reported having sex and compared them to the 13 reporting not having sex using an independent samples t test. This additional analysis also showed equal variances ($F = .31$, $p = .58$) and psychopathy was higher in those having sex ($M = 164.15$, $SD = 25.82$) compared to those not having sex ($M = 142.08$, $SD = 19.84$), $t(24) = 2.45$, $p = .02$, 95% CI [3.44, 40.71].

relationships may be. In support of the hypothesis, psychopathy showed expected associations with social abilities and an unrestricted sexual orientation. Integrating across these associations, social abilities may be used to facilitate sexual activity in psychopathy as expected by the proposed function. Future research with larger sample sizes may want to test this proposed effect using mediation. The self-report nature of this study, however, limits an assessment of special design features (Simpson and Campbell 2016). Thus, in a second study, we examined whether psychopathic traits in men generate favorable impressions from women, which provides a more direct test of the special design features proposed by the sexual exploitation hypothesis.

Study 2: Method

Participants

Participants were 108 women ($M = 20.41$, $SD = 4.38$) enrolled in first- or second-year psychology courses at a Canadian university. Most of the sample reported heterosexual (89%) as their sexual orientation, followed by bisexual (7.4%) and no specific orientation (4%). The ethnic composition consisted of Caucasian (43%), Black (16%), Arab (8%), East Asian (8%), South Asian (7%), multiple ethnicities (7%), and the remaining 11% Indigenous, Latin American, Southeast Asian, or West Asian. Fifty-three women reported being in a romantic relationship (i.e., “partnered”) and 47 reported being single. The remaining 8 women reported not being sure about their relationship status or being in an open relationship. Analyses involving relationship status used the 100 women indicating either being partnered or single. Participants were given course credit for participating.

Materials

Videos of Study 1 Participants

Forty-five videos from the participants in study 1 were used,⁶ ranging from 1.5 to 2 min in length. These videos only showed the participants from study 1 in the frame of the camera, focusing their interpersonal style on the viewer. Videos were used as stimuli in the current study.

Praat Software Analyzer

Praat software analyzer version 6.0.26 is a free online software program that allows for analyzing voice pitch frequencies by

⁶ The sexual exploitation hypothesis assumes psychopathy functions to exploit female mate choice in dating encounters. Thus, a participant was excluded since they indicated their sexual orientation as gay.

using voice pitch contours. We used the program to analyze study 2 participants’ voice pitch frequencies.

Procedure

Participants arrived at the laboratory, were given a description of the components of the study, and then provided consent to participate. As in study 1, this study also involved other components reported elsewhere (manuscript in prep). The first phase relevant to this study had participants viewing a random sample of two dating videos of men that were matched on attractiveness (see section below). Two videos were chosen to provide an analysis of *relative* attractiveness ratings given by women when comparing two men. Since men were matched on physical attractiveness, differences in ratings across the two videos shown may be due to interactional-style attractiveness (i.e., how desirable the men are appearing in their interactions).

Following each video, participants rated the men in the videos on proxies of dating desirability using three questions: attractiveness, sexual attractiveness, and confidence. These questions were rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*) regarding how much the participants agreed that the men in the videos matched the description of attractiveness, sexual attractiveness, and confidence in a dating partner. These items were averaged to provide a mean *dating desirability* score for each man from study 1. Higher mean dating desirability indicates that the man showed more components of a desirable male dating partner; each of the components may be viewed as additive, with the overall mean dating desirability suggesting more desirability as a prospective dating partner. Because each study 1 man had his own dating desirability score and each woman from study 2 did not rate all videos, we could not calculate an overall coefficient of reliability for this variable. However, the overall interitem correlation for these items across participants was .44, suggesting that the ratings for these items were related to each other across the sample as a whole.⁷

After rating each video, participants were then instructed to leave a pretend voicemail message for each man that they viewed in the videos, assessing a physiological measure of attractiveness (Fraccaro et al. 2011). Participants were given the following scenario: “Imagine the guy in this video has indicated that he is interested in meeting up with you. You just saw his dating video and decide to call him, but he’s not home. Read the text below to leave a voicemail.” The text was then given to participants to read while being voice recorded: “Hi there, I saw your dating video. I’m just calling to see if

⁷ We also calculated the alpha coefficients for each of the five participants that had the highest number of study 2 participants rate their videos ($ns = 8–12$). These alpha coefficients ranged from .42 to .88. This suggests the alpha reliability for men receiving most responses from study 2 participants was in the acceptable range.

you want to meet up some time. Call me back.” Raised voice pitch is taken to mean higher levels of interest toward men (Fraccaro et al. 2011). Lastly, women’s relationship status and age may affect ratings (e.g., Blanchard et al. 2016; Qureshi et al. 2016), so we included these as covariates.

Preparing Matched-Attractiveness Videos

The photographs of participants from study 1 were viewed and rated by 11 individuals (7 women, 4 men) who were blind to the study protocol and independent of the current study 2 sample. Subjective ratings of facial and body attractiveness were given on a scale from 1 (*very unattractive*) to 7 (*very attractive*) with ratings of all 11 individuals averaged for each participant from study 1. Assessing interrater reliability, the intraclass correlation coefficient of these ratings was .95. The mean of facial and body attractiveness was then used to sort by rank-order study 1 participants into one of three physical attractiveness bins: (1) significantly below average attractiveness ($n = 16$, $M = 2.46$, $SD = .29$), (2) somewhat below average attractiveness ($n = 14$, $M = 3.42$, $SD = .33$), and (3) average attractiveness ($n = 15$, $M = 4.17$, $SD = .27$). Groups significantly differed from one another on physical attractiveness (all $ps < .001$). Setting up the protocol this way allowed for women in this study to view men that were approximately matched on attractiveness, reducing the possibility of men’s physical attractiveness acting as a confound and allows for assessing the potential effect of psychopathy on inducing favorable impressions.

Voice Pitch Manipulation and Preparation

Using the Praat software analyzer, voice messages provided by participants ($n = 99$, with two messages per participant, making total $N = 198$) were saved as .mp3 files and uploaded to Praat. Nine women either chose not to provide voice messages or technical issues prevented their messages from being saved. Voice pitch analysis was performed using the autocorrelation function to search for pitch between 100 and 600 Hz (recommended when sampling women’s voices; www.praat.org). Other parameters were set to standard settings (.03 silence threshold, .45 voicing threshold, .01 octave cost, .35 octave-jump cost, and .14 voiced/unvoiced cost) except when background noise distorted the pitch reading ($n = 4$ recordings), where voice threshold parameter was reduced to .25 (recommended on www.praat.org FAQ). Mean pitch was recorded for each message over the span of the spoken voice message (range was 5 to 15 s). Mean pitch differences⁸ were calculated for each participant completing this procedure.

⁸ Mean pitch (Hz) difference = Mean pitch (Hz) of first message – mean pitch (Hz) of second message.

Table 2 Hierarchical linear regression predicting mean dating desirability ratings

Predictors	β [95% CI]	p	sr^2	R^2
Step 1				
Physical attractiveness	.57 [.318, .823]	.001	.33	
Step 2				
Physical attractiveness	.53 [.282, .777]	.001		
Psychopathy	.25 [.003, .493]	.048	.06	
Total R^2				.39***

Note. $N = 45$. sr^2 indicates squared semipartial correlation and describes the proportion of variance accounted for by each predictor

*** $p < .001$

Study 2: Results

Total mean ratings of dating desirability were assessed first, with physical attractiveness of participants being controlled. Table 2 shows men’s average ratings from women ($M = 3.67$, $SD = .95$) regressed on men’s physical attractiveness ($M = 3.33$, $SD = .77$; step 1) and total psychopathy ($M = 161.91$, $SD = 25.18$; step 2). Psychopathy predicted higher average desirability ratings from women who viewed their dating videos after accounting for men’s physical attractiveness scores, explaining 6% of the variance in ratings. Exploratory analyses of psychopathy facets showed lifestyle traits had the strongest relationship with desirability ratings after controlling for physical attractiveness (Table 3). Post hoc power analysis suggested that with the sample size and a one-tailed test (due to the a priori predictions), our observed effect for total psychopathy ($r = .30$) had a power of .65.

Relative ratings of desirability across men were assessed using a within-subjects analysis, with each female participant as the within-subject observation, and the difference score in her desirability ratings as the outcome variable. First, of the two videos viewed by women, we analyzed whether the man with higher total psychopathy tended to receive higher ratings of desirability without considering the magnitude difference in psychopathy between the two men. A difference score in women’s ratings and whether they significantly differ from 0 was assessed where positive mean values indicate a preference for the more psychopathic man and negative mean values indicating the reverse. A one-sample t test was conducted and showed that the difference score in women’s ratings ($M = .29$, $SD = 1.50$) was nearly in favor of the higher psychopathy man, $t(96) = 1.89$, $p = .062$, 95% CI mean difference $[-.014, .586]$.

Assessing the sexual exploitation hypothesis with relative ratings of women, however, should incorporate the *magnitude difference* in psychopathy between the two men viewed (i.e., a greater difference in psychopathy between two men should lead to a more noticeable difference in ratings). The sexual

Table 3 Partial correlations of mean dating desirability ratings and psychopathy total and facet scores

	Total psychopathy	Interpersonal	Affective	Lifestyle	Antisocial
Mean dating desirability rating	.30* [.005, .569]	.27 [-.039, .576]	.03 [-.269, .322]	.44** [.231, .641]	.11 [-.216, .444]

Note. $N = 45$. All coefficients are partial correlations controlling for physical attractiveness. 95% CI in block parentheses were calculated using bootstrapping with 1000 samples

* $p < .05$; ** $p < .01$

exploitation hypothesis expects that as two men differ more on psychopathy, the higher psychopathy man should be perceived more favorably in a dating context. Hierarchical linear regression showed that the difference in psychopathy of the two men viewed ($M = 30.01$, $SD = 21.87$; range 1 to 98) predicted a greater difference in desirability ratings after controlling for women's age and relationship status (see Table 4), accounting for 11% of the variance in women's difference scores. Since this analysis involved matched-attractiveness men, this suggests as psychopathic traits markedly differ between two men, those with more psychopathic traits generate higher ratings from women. Men similar in psychopathic traits, however, generate similar ratings from women. Post hoc power analyses for this effect showed that with the sample size and a one-tailed test (because of the a priori prediction), our power for identifying the effect was .77.

We analyzed voice pitch change of women using multiple regression. Controlling for women's age and relationship status in step 1 of the regression, women's voice pitch did not change significantly depending on men's overall psychopathy in step 2, $\beta = .05$, 95% CI [-.160, .253], $p = .657$. The overall model was not significant in predicting voice pitch change, $F(3, 86) = .42$, $p = .74$. A follow-up exploratory analysis examined the facets of psychopathy in addition to the control

variables of age and relationship status. The results of the facet-level analysis showed women's voice pitch change was significantly predicted by the model, $F(6, 83) = 3.22$, $p = .007$, accounting for 19% of the variance in voice pitch change. Significant predictors were affective traits, $\beta = .30$, 95% CI [.069, .535], $p = .012$, and antisocial traits, $\beta = -.34$, 95% CI [-.561, -.090], $p = .007$.⁹ These exploratory analyses suggest women may increase their voice pitch to men higher in affective traits but decrease pitch to men higher in antisocial traits.

Study 2: Discussion

This study assessed whether viewing young men in interpersonal interactions could lead to different desirability ratings from women based on men's psychopathic traits manifesting within those interactions, providing a test of expected special design features of the sexual exploitation hypothesis. The evidence across the different analyses suggests psychopathic traits captured in a dating context may influence the subjective ratings of women in their favor. This supports the sexual exploitation hypothesis in that women's ratings were more favorable to men with more psychopathic traits, suggesting that they may be "enacting" in these contexts what women desire more closely than what men with fewer psychopathic traits are "enacting."

Dating desirability ratings for each young man were predicted by his psychopathic traits beyond his physical attractiveness ratings (which were assessed by independent raters, not study 2 participants), suggesting psychopathy may enhance a male's desirability when viewed in these brief encounters. This finding supports the sexual exploitation hypothesis, in which psychopathy is predicted to enable men to "enact" interpersonal effectiveness that captures attention, appears confident, and gains favorability from women (i.e., to meet women's mate choice preferences in naturalistic dating encounters). This finding is consistent with research showing an alluring attractiveness in psychopathy (e.g., Brown 2009; Hare 1993; Kirkman 2005; Leedom et al. 2012). Combining these findings with research showing that more psychopathic

Table 4 Hierarchical linear regression predicting difference in dating desirability ratings

	β [95% CI]	p	sr^2	R^2
Step 1				
Age	.11 [-.086, .273]	.305		
Relationship status	.07 [-.137, .272]	.513		
Step 2				
Age	.11 [-.082, .259]	.304		
Relationship status	.03 [-.166, .225]	.765		
Psychopathy difference	.33 [.122, .503]	.002	.11	
Total R^2				.12**

Note. $N = 89$. sr^2 indicates squared semipartial correlation and describes the proportion of variance accounted for by each predictor. Psychopathy difference indicates the magnitude difference in total psychopathy scores between the two men viewed by women. The range was 1 to 98, where 98 represents the largest difference in psychopathy scores that a woman viewed

** $p = .01$

⁹ Interpersonal traits, $\beta = .20$, 95% CI [-.057, .440], $p = .130$, and lifestyle traits, $\beta = -.13$, 95% CI [-.382, .141], $p = .363$, were not statistically significant independent predictors.

young men may exhibit positive self-images (Visser et al. 2010) suggests psychopathy may facilitate confidence and esteem in performing more attractive behavioral and verbal exchanges that women may find attractive including space-occupying movements, direct gaze, and touching (e.g., Renninger et al. 2004). While specific behaviors and words were not analyzed in this study, future research should examine exactly what behaviors and words individuals with psychopathic traits may be using to generate a possible appealing allure.

Of the facets, lifestyle traits provided the strongest link to desirability ratings from women. These traits include disinhibition, lack of responsibility, and having a sensation-seeking orientation. Why these traits specifically should garner the strongest relationship with desirability across men should be explored further, but one possibility is that they make men seem more interesting, exciting, and fun to engage with in conversations (Harasymchuk and Fehr 2012). Men exhibiting these traits may be effectively signaling that they are exciting partners and women may be responding with a preference for those traits in a short-term dating context.

When comparing two men, those higher in psychopathic traits tended to receive higher ratings from women when considering the *magnitude difference* in psychopathic traits between the two men. Age and relationship status did not affect this association as might have been expected (Blanchard et al. 2016; Qureshi et al. 2016). Romantic relationships involve choosing partners at the expense of other potential partners, which means it is necessary to make relative comparisons between potential partners. This study synthesized comparative choices by having women view and rate two men having similar physical attractiveness but varying on psychopathy, with the results showing that psychopathy may provide a competitive advantage in some prospective mating contexts. This supports the sexual exploitation hypothesis in that more psychopathic men may be appearing relatively more desirable as dating partners (i.e., meeting mate choice standards) when being compared to less psychopathic men. This may be due to numerous complex factors that implicate dynamic, in-the-moment interactions, implicating sexual self-esteem (Smith et al. 2019), confidence (Visser et al. 2010), and effective non-verbal behaviors (Renninger et al. 2004), and not just in one-on-one dates either, but also in social contexts with both same- and opposite-sex individuals that have dating implications.

Using voice pitch instead of subjective ratings as an indicator of desirability, the results did not suggest a preference for overall psychopathy. Post hoc exploratory analyses did, however, suggest affective traits elicited more interest and antisocial traits less interest based on voice pitch increasing and decreasing, respectively. These findings partially support the sexual exploitation hypothesis in that there is some indication that psychopathy can lead to influencing a biological indicator of attractiveness through voice pitch change (Feinberg et al.

2008; Fraccaro et al. 2011). If higher voice pitch indicates genuine interest (e.g., Fraccaro et al. 2011), then this study suggests affective traits of psychopathy may positively influence interest, a finding that is concerning in light of affective traits being uniquely associated with sexual sadism (Mokros et al. 2011) and intimate partner violence (Cunha et al. 2018). The lack of preference for antisocial traits may suggest that if they are contributing to appearing as an attractive mate, they may be doing so through derogating and dominating potential rivals (see “General Discussion” section) rather than generating direct appeal. Future research should examine these exploratory effects with a consideration of women’s different sexual strategies (Buss and Schmitt 1993) and using other procedures for assessing women’s preferences (e.g., pupil dilation, willingness to date).

Upon first glance, the voice pitch findings may seem to conflict with the overall ratings of desirability that found lifestyle traits to be desirable. However, overall ratings compared across all men (between-subjects), whereas the voice pitch analysis involved comparing the two men viewed by each woman (within-subjects). It is plausible that both a preference exists for higher affective traits when women compare men, and that when changing the focus to comparing across men, those with more lifestyle traits are preferred. Another possibility is that signals of preference that *are not* made available to awareness (i.e., voice pitch) may differ from signals of preference that *are* available to awareness (i.e., rating someone). Both may indicate attraction and preference, but for different qualities. Thus, preferential subjective ratings may be given to lifestyle traits that signal excitement and being adventurous, whereas physiological attractiveness not typically available to awareness (i.e., voice pitch) may be more subtly influenced by a disposition in men created by affective traits (i.e., low anxiety, appearing calm). Despite this interesting nuance to the findings, the sexual exploitation hypothesis proposes a function ascribed to the *constellation* of psychopathic traits in men and not the particular facets, suggesting that the results that inform this hypothesis most are those using total psychopathy scores, with the clearest test being of those scoring high on all facets (e.g., Mokros et al. 2015).

In summary, the results provide preliminary support of the sexual exploitation hypothesis of psychopathy in that psychopathic traits led to receiving higher dating desirability ratings from women, even after controlling for their physical attractiveness. Additionally, a greater difference in psychopathy led to more favorable ratings. These results suggest that psychopathy in men may enable them to “enact” the desirable qualities women prefer in social and dating encounters. That the current study used ratings generated from viewing actual interpersonal interactions may provide a good test of and evidence for the putative attractiveness of psychopathy, particularly as special design features in performing the proposed function. These findings are in line with forensic and clinical case histories

showing the gripping influence psychopathic individuals can have on romantic partners (e.g., Brown 2009; Hare 1993; Kirkman 2005; Leedom et al. 2012) and supports the evolutionary relevance of psychopathy for sexual relationships (Harris et al. 2007; Seto et al. 1997; Visser et al. 2010).

General Discussion

The goal of these studies was to provide a preliminary test of the sexual exploitation hypothesis of psychopathy proposed in this paper, which states that psychopathy functions in males to exploit female mate choice by appearing attractive in social and prospective dating encounters. While we did not assess directly whether psychopathy facilitated *mimicking* these desirable qualities, we do provide preliminary evidence that men higher in psychopathy are exhibiting something in these interactions that enables them to be preferred by women. Our findings suggest preliminary support of the hypothesis and necessitate a more rigorous test of it in larger and more diverse samples, including community men and offenders.

It should be noted that ratings from women occurred without their awareness that the men were assessed on psychopathy. Some studies have found women may prefer psychopathic individuals after reading their vignettes (e.g., Blanchard et al. 2016; Carter et al. 2014), but our study found women may prefer psychopathic men without awareness of their “true” personality characteristics. This is what the sexual exploitation hypothesis expects, that psychopathy allows for deceptively playing to women’s preferred mate characteristics (e.g., honesty, charisma, success), making themselves appear attractive and desirable for qualities they may lack. Future research should explore whether women are aware of the psychopathic tendencies of men in these videos and whether awareness influences preferences.

With tentative support from the current studies, we can begin to unpack how the traits of psychopathy may exist in service of this sexual exploitation function that may enable fast access to relationships, promote multiple relationships, and appear appealing to the opposite sex in dynamic in-the-moment encounters (e.g., Moore 2010; Renninger et al. 2004). Part of this future work should involve unraveling how manifesting these specific traits may coordinate men to optimize themselves in appearing desirable by mate choice standards.

The interpersonal traits may be obviously representative of attempts to optimize desirability: charming others, believing and convincing others of self-worth and abilities, and manipulating and lying to either denigrate others or enhance one’s self. These tactics can be done unconvincingly, however, and may require extensive social processing abilities and skills to perform them effectively and believably. That interpersonal traits correlated with social processing information and social skills in study 1 provides some evidence for this link.

Affective traits may predispose an individual to manifest the interpersonal traits above without associated feelings of shame and guilt that may otherwise come from enacting those traits. These traits may allow men to embody confidence and low anxiety in interactions with women. Additionally, they may orient individuals such that they can more easily say one thing (i.e., “you are my soul mate”), but then do another (i.e., sleep with that person’s best friend). Indeed, there is some evidence that individuals higher in psychopathy are less susceptible to the influence of cognitive dissonance (Murray et al. 2012), suggesting that they can more easily say and do contradictory things. The combination of potentially enabling a confident and disarming interpersonal style while also facilitating a lack of commitment may make the affective traits crucial for enacting the proposed function.

The lifestyle traits may optimize desirability by allowing men to enact an energetic, exciting, and dominant interpersonal style. These traits may communicate in a potential romantic context excitement, adventurousness, and “living in-the-moment.” Along with evidence that women rank “socially exciting” as an important feature in prospective male partners (Buss and Barnes 1986), studies that examine relational boredom also show a prototypically boring and undesirable relationship tends to contain features such as a lack of fun, not being stimulating enough, lacking surprises, and lacking energy (Harasymchuk and Fehr 2012). Lifestyle traits may signal to the opposite sex that relational boredom is very unlikely with them, and thus stimulate interest in them as potential romantic partners.

The antisocial traits of psychopathy (e.g., indiscriminate rule-breaking, early behavior problems, short temper) present a unique problem in that it is difficult to conceive of these traits being desirable. This was supported in this study with the voice pitch findings. However, rule-breaking and antisociality, especially in youth, may be seen as desirable as well, which is supported by evidence showing that bullies may have more popularity (de Bruyn et al. 2009) and more sexual partners (Provenzano et al. 2018). There is also evidence that individuals, including therapists, may be attracted to psychopathic men who have histories of violence and antisociality (Gacono et al. 1995; Leedom et al. 2012; Logan 2015). Thus, the role that the antisocial traits play in optimizing men for desirability in social and dating encounters may be complex. We suspect that the antisocial traits combined with the other traits of psychopathy are what may be a key factor, suggesting that those scoring high on all facets (e.g., Mokros et al. 2015), while potentially being the most dangerous, may also be the most able to mimic a desirable facade.

How might boldness traits described in the triarchic model optimize males for this function (Patrick 2018; Patrick et al. 2009)? Since boldness encompasses social potency, self-assurance, adventurousness, and fearlessness, it may be expected that manifesting them would also serve to enhance the

capacity of men to exhibit desirable attributes in social and dating exchanges. Furthermore, the combination of boldness traits with the tendency for dishonesty, callousness, and disinhibition may also create an interpersonal gestalt that may *proficiently* execute the proposed function. This combination in men may lead to the ruthless and self-assured pursuit of sexual opportunities while generating an allure of confidence, attractiveness, and deception of one's desirability as a prospective mate. Future research using the sexual exploitation hypothesis should address how boldness and the triarchic model generally may fit this function as well. Additionally, there are other factors to consider in future research examining the sexual exploitation hypothesis, some of which we now briefly describe.

These studies provide added evidence that an evolutionary perspective of psychopathy may help in understanding the construct of psychopathy, its association with other variables, and its (self-enhancing) ability in relationships and society (Babiak and Hare 2006; Glenn et al. 2017; Holtzman and Strube 2012; Kirkman 2005; Porter et al. 2011). The usefulness and importance of studying evolutionary function, however, should also be examined alongside proximate explanations, including the physiology for enacting the plausible function and its ontogeny (Tinbergen 1963; for an example of such integration in psychopathy, see Wiebe 2004).

What this study adds to the existing evolutionary literature on psychopathy is its focus on proposing a precise function of psychopathy that differentiates it from other plausible strategies for exploitation and testing that function's special design features (Andrews et al. 2002; Simpson and Campbell 2016). The sexual exploitation hypothesis proposed here aligns with other evolutionary conceptions of psychopathy including its cheating, fast life history, and alternative mating properties. While our focus was on more specific-level properties of a plausible function of psychopathy, this hypothesis should be rigorously examined for its fit with broader- and middle-level explanations as well. For example, applying life history theory to this hypothesis may facilitate an understanding of its developmental aspects. What environmental signals might suggest to boys and young men to invest in (proposed) display-oriented traits such as psychopathy as opposed to more provisioning-oriented male mating strategies? Incorporating other levels of evolutionary explanation with the sexual exploitation hypothesis will enrich our understanding of this possible function of psychopathy and add to an understanding of how it may be prevented (e.g., developmentally; see Ribeiro da Silva et al. 2019).

In exploring possible connections across different levels of evolutionary explanation, we also emphasize how the sexual exploitation hypothesis expects the proposed function to be better executed with a constellation of psychopathic traits rather than any single dimension. *A greater loading of these traits co-existing in an individual male is proposed to be most potent*

for executing the proposed function proficiently and specifically, and thus, would be most accurate in capturing the proposed special design features involved in exploiting female mate choice. Thus, research using latent profile analysis or other methods of assessing constellations of traits may be useful for examining this key assumption (Mokros et al. 2015).

An additional factor to consider in evaluating the sexual exploitation hypothesis further is clarifying the role of sexual coercion (e.g., Wiebe 2004), mimicking female mate choice preferences, and "sexual exploitation." We offer three suggestions using an adaptationist perspective. First, the propensity for sexual coercion in psychopathy may reflect a possible "beneficial effect" that arose after the selection of its features to successfully mimic female mate choice preferences, which would represent exaptation for sexual coercion. Second, sexual coercion may facilitate the evolution of female mate choice (Prum 2017). Subsequently, a "beneficial effect" of mimicking female mate choice may have arisen through exaptation of sexually coercive men who were already psychopathic. Third, the "beneficial effects" for the different pathways of sexual exploitation (mate choice vs. coercion) may have co-evolved to shape the traits of psychopathy, suggesting difficulty in parsing the two, which may be expected for complex constellations of traits (Andrews et al. 2002). Future theoretical and empirical work should examine these and other possibilities in understanding how psychopathy may represent sexual exploitation from an evolutionary perspective.

In pursuing the proposed function further, it may also be useful to differentiate between sexual and natural selection (Prum 2017). Sexual selection may produce completely arbitrary display traits and mating preferences for those displays that are "merely beautiful" to the observer and may not necessarily increase survival or fecundity (Prum 2012; see also Fisher 1935; Kirkpatrick 1982; Lande 1981). This suggests that what one sex finds desirable (e.g., female mate preferences) can produce a strong selection pressure on its own. A theoretical implication is that psychopathy may indicate the existence of an extreme sexual selection strategy that optimizes effort in appealing to mate preferences in the opposite sex, even if those displays are empty and *without* the usual accompanying benefits to the opposite sex. Furthermore, such a rich investment in display may come at the expense of investing in traits that typically ensure stability and survival of offspring through tangible benefits (e.g., paternal care, mate provisioning). A reproductively viable strategy of men that may be more in line with naturally selected traits include enacting deep male–male bonds, emphasized responsibility, and shared purpose (Benenson 2014), traits that are rare or absent in psychopathic individuals (Hare 2003). This may suggest that psychopathy, as a possible extreme sexual selection strategy, also may undermine naturally selected male attributes. Future research should examine the putative differences in these mating-focused

compared to provisioning-focused male mating strategies to determine where psychopathy may fall within this possible continuum (see also Ellis 2005).

Limitations and Future Directions

This study has a number of limitations that need to be carefully considered and future work designed to address them. The first is that self-report measures were relied on primarily for study 1 and importantly for social intelligence. The positive associations with psychopathy and social intelligence factors may be more a result of self-perceived social competence rather than actual social intelligence. Future studies should examine other, more objective measures of social intelligence to examine this putative relationship. Second, the protocol for assessing dating desirability used video-recorded dating sessions that only spanned 2 min. While this may provide a snapshot of interpersonal behavior, most romantic relationships involve a longer period of interpersonal assessment before engaging in intimacy (Buss 2016). Additionally, these videos involved the young men speaking to a woman in the video (whom was not visible but could be heard). The presence of another woman may have created an unforeseen confound in our raters. Ideally, this limitation could be addressed by having real-time and live dyadic interactions between participants especially in real or synthesized romantic contexts (e.g., Jauk et al. 2016).

Another limitation of how we chose to present the dating videos to raters was that we chose to include the video and audio components together so as to examine a verbal and nonverbal behavioral “gestalt” of psychopathy manifesting in a dating context. A more robust test of the sexual exploitation hypothesis may also have dating scenarios presented to raters in one of three conditions: video and audio included, video only, and audio only. This may give a clearer test of how the psychopathic men generated favorable ratings and provide an indication of whether it was their verbal and/or nonverbal behavior that influenced ratings (Moore 2010).

There were also limitations involving sample characteristics. First, the studies had relatively modest sample sizes, and future work could attempt larger scale samples, getting a broader range of psychopathic traits across men and a diversity of raters. Second, the study included only university students, and future studies may want to expand to other contexts including forensic and clinical as well as other age groups including youth and nonstudent adults. Another limitation involves not considering individual differences in mate choice within the study. Sexual strategies theory suggests women (and men) choose different attributes in partners when seeking a short- compared to long-term partner (Buss and Schmitt 1993). Relationship status may also affect desirability ratings depending on whether the individual is seeking extra-pair relationships. Thus, future research should examine variables that capture individual differences

such as personality, sociosexuality, and intentions for extra-pair relationships while in a relationship when assessing the sexual exploitation hypothesis.

Lastly, we were limited in how we assessed the special design features proposed in the sexual exploitation hypothesis. Future research may want to examine expected design features including effects in men toward women but not in women toward men as well as the influence of psychopathy within certain contexts (i.e., where women are present) but not others (i.e., in solitary laboratory tasks). Additionally, special design features of psychopathy may be indicated by effects occurring in real-time interactions as well as in affecting real behavioral choices.

Conclusion

This study proposed a precise and specific evolutionary function of psychopathy in men and tested its proposed special design features. There was preliminary evidence that supports the sexual exploitation hypothesis of psychopathy from the two studies. The evidence suggests that in the landscape of individuals looking for romantic relationships, there may be sexual “sneakers” or “mimics” who appear attractive and desirable by mate choice standards yet have underlying dispositions that indicate a deceptive and loosely committed orientation. While this study points to the potential *evolutionary* function of psychopathy, it does not *socially* justify nor excuse the behavior of psychopathic individuals. This research can be used to promote healthier relationships by prioritizing an understanding of the allure of psychopathy in forming relationships, and points to a need for elucidating the precursors and developmental pathway(s) that give rise to psychopathy in the first place. While we have presented preliminary evidence, future research should untangle the role of context-specificity and observer-dependent characteristics in determining the possibility that psychopathy facilitates mimicking desirable mate choice qualities within social and dating contexts.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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