

# **Is the link between endorsement and engagement in sexual coercion associated with life history strategy?**

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## **Abstract**

We assess whether traits associated with life history strategy moderate the association between endorsement and engagement of sexual coercion. In a sample of 155 men, we measured engagement in subtle sexually coercive behaviours using a novel measure, where participants reported their likely response when faced with several sexual/dating scenarios (e.g., a situation where the participant is sexually rejected). We also measured participants on mating effort, aggression, socioeconomic status (SES), the dark triad traits (psychopathy, narcissism, and Machiavellianism), and endorsement of sexual coercion through acceptance of rape myths. We found that men high in mating effort, SES, and Machiavellianism were more likely to engage in sexually coercion. As expected, greater endorsement was associated with greater engagement in sexual coercion, and this was significantly moderated by narcissism and Machiavellianism, but in opposite directions, with higher levels of Machiavellianism and lower levels of narcissism associated with a greater association between endorsement and engagement. Overall, there was no consistent pattern between traits associated with an accelerated life history strategy and sexually coercive behaviour.

## Introduction

Sexually coercive behaviour is an insidious problem in many societies around the world. Sexual coercion encompasses the use of nonphysical tactics by an aggressor to engage in sexual activity with a nonconsenting partner (DeGue & DiLillo, 2004). These tactics can include the use of lies, guilt, pressure, false promises, threats, continual arguments, arousal tactics, alcohol, drugs, and ignoring verbal requests by the victims to stop, without using physical force. Research suggests that sexual coercion occurs more frequently than forcible sexual assault (Ross, Drouin, & Coupe, 2019); however, sexual coercion can often go unnoticed, concealed by cultural norms and societal expectations where there is an assumption that sexual coercion is an acceptable means to an end (Lamarche & Seery, 2019). Sexual coercion has been shown to be detrimental to the mental health of the victim, where victims can go on to suffer from anxiety, depression, post-traumatic stress, or may lose trust in others and confidence in themselves (French, Tilghman, & Malebranche, 2014; Jeffrey & Barata, 2017). Also, victims of sexual coercion can develop serious intimacy and sexual problems and may have difficulties developing healthy romantic relationships (Ross et al., 2019). Due to the severity of consequences for victims, it is crucial that we understand predictors that lead individuals to engage in sexually coercive behaviour.

Many studies have shown that endorsement in sexually coercive behaviours correlate positively with subsequent engagement in those behaviours. For instance, men who show a greater acceptance of rape myths and greater heteronormative beliefs report higher engagement in sexually coercive tactics (Bohner, Jarvis, Eyssel, & Siebler, 2005; DeGue & DiLillo, 2004; Eaton & Matamala, 2014). However, generally, the utility of attitudes predicting behaviour is debated, and it has been suggested that the accuracy of attitudes as predictors for behaviour can be improved by considering moderating variables (Hogg & Vaughan, 2018). Indeed, previous studies investigating engagement in sexual coercion have found a stronger association between attitudes and coercive behaviour in men compared to women (Zweig, Barber, & Eccles, 1997, but see Eaton & Matamala,

2014), as well as moderating effects of other individual differences, such as mate desirability (Starratt, Popp, & Shackelford, 2008), or deficits in empathy (DeGue & DiLillo, 2004). These studies indicate that investigating moderating factors between endorsement and engagement may help in our understanding of sexual coercion.

To help identify other potential moderators between endorsement and engagement in sexually coercive behaviour, we can turn to an evolutionary perspective. One theory rooted within evolutionary biology is life history theory, which suggests that all organisms have inherently finite bioenergetic and material resources that can be used for evolutionarily adaptive activities (Stearns, 1992). Life history strategies are conducted along a “fast-slow” continuum, where a slow life history strategy is characterised by greater investment in parental effort and long-term mating. Conversely, an accelerated life history strategy is characterised by greater investment in mating effort, greater risk-taking and impulsiveness, and lower investment in parental effort. Essentially, individuals adopting an accelerated life history strategy prioritise immediate reproduction opportunities and the quantity of offspring, at the cost of the quality of those offspring. One could consider engaging in sexually coercive tactics as part of a short-term mating strategy associated with an accelerated life history strategy. That is, engaging in sexual coercion may act as a fitness enhancing tactic by undermining consent and potentially leading to sexual opportunities that would otherwise not be available (Figueredo et al., 2018; Gladden, Sisco, & Figueredo, 2008). We could also expect traits or environmental demands associated with an accelerated life history strategy to strengthen the association between endorsement and engagement in sexually coercive behaviour, as sexually coercive tactics are potentially more evolutionarily advantages for individuals adopting this strategy.

Here, we investigate several traits previously identified to be associated with life history strategy. First, mating effort involves an individuals’ limited biological resources invested in searching for and seducing new mates. High mating effort is associated with an accelerated life history strategy and usually comes at the cost of investment in parental effort. As such, we may

expect that higher investment in mating effort may be associated with engagement in sexually coercive tactics. Indeed, previous research suggests that an accelerated life history strategy has been linked with sexual promiscuity, short-term romantic relationships, and sexual aggression (Egan & McCorkindale, 2007; Gladden et al., 2008; Winking, Kaplan, Gurven, & Rucas, 2007). While research states accelerated mating effort predicts engagement in sexual coercion (Koscielska, Flowe, & Egan, 2020), few studies have investigated it as a moderator between sexually coercive attitudes and engagement in the behaviour.

Additionally, increased aggression, including both interpersonal aggression and intimate partner violence, has also been associated with an accelerated life history strategy (Figueredo et al., 2018; Lu & Chang, 2019). Indeed, an accelerated life history strategy is associated with greater intimate partner violence (Figueredo et al., 2018), and sexually coercive males were more likely to endorse aggressive strategies and the use of force as a legitimate means for obtaining personal sexual gratification (Lyndon, White, & Kadlec, 2007). While the link between aggression and sexually aggressive behaviour is well documented (e.g., Foshee, Benefield, Ennett, Bauman, & Suchindran, 2004), few studies have investigated whether aggression is associated with more subtle forms of sexual coercion, or whether aggression moderates the association between sexually coercive attitudes and engaging in sexually coercive behaviour.

Some research has extrapolated life history theory to predict facultative adjustments of life history traits in response to environmental factors. For instance, ecological unpredictability, such as that experienced by those with low socioeconomic status (SES), is thought to be linked with risk-taking behaviour and other life history traits (Brumbach, Figueredo, & Ellis, 2009). As such, we could also expect SES to moderate the association between endorsement and engagement of sexual coercion (French et al., 2014). However, contradicting research suggests that SES may be positively associated with sexual coercion. It is unclear based on life history theory why men with traits usually desired by women (i.e., high social status/income) could potentially engage more frequently in sexually coercive tactics, though a possible social explanation is that men's willingness to use

sexual coercion can involve an abuse of power and authority (Lyndon et al., 2007), leading to high social status males to be more accepting of sexually coercive behaviour.

Finally, the dark triad traits have also been associated with life history strategy (Jonason et al., 2017; McDonald, Donnellan, & Navarrete, 2012). The dark triad of personality consists of three socially adverse, subclinical personality traits, psychopathy, narcissism, and Machiavellianism (Paulhus & Williams, 2002). Psychopathy can be identified by lack of emotional depth, risk-taking behaviour, and antisocial behaviour. People with high levels of narcissism often have an inflated sense of self-importance, delusions of grandiosity, cravings for constant attention, and an obsession with power and success. Machiavellianism can describe someone who would do anything to benefit themselves, using interpersonal manipulation to achieve their goals. We could expect each dark triad trait to distinctly moderate the association between endorsement and engagement of sexually coercive behaviour. Psychopathy has been proposed to be closely linked with an accelerated mating effort approach (Lalumiere & Quinsey, 1996). Indeed, people with psychopathic tendencies are more likely to engage in sexual coercive tactics and sexual aggression (DeGue & DiLillo, 2004; Harris, Rice, Hilton, Lalumière, & Quinsey, 2007; Muñoz, Khan, & Cordwell, 2011), and invest more in mating effort over parental effort (Mededović, 2019). Similarly, facets of narcissism are also associated with an accelerated life history strategy (Schmitt et al., 2017), and has also been associated with the use of sexually coercive tactics and sexually aggressive behaviour (Egan & McCorkindale, 2007; Lamarche & Seery, 2019; Zeigler-Hill, Enjaian, & Essa, 2013). Finally, although research on psychopathy and narcissism has been highly publicised, there is very little research on Machiavellianism as an individual trait, with most studies including Machiavellianism as a subcomponent of the dark triad (e.g., Figueredo, Gladden, Sisco, Patch, and Jones, 2016; Koscielska et al., 2020). However, some studies have found that Machiavellianism can predict the use of sexually coercive tactics, especially with regards to mate retention (Brewer & Abell, 2015; McHoskey, 2000).

While previous research has focused on investigating the direct effects these life history traits have on sexually coercive behaviour, relatively little work has been done to test for their moderating effects on the association between endorsement and engagement in sexual coercion. Here, we assess the potential moderators of mating effort, SES, aggression, and each of the dark triad traits: psychopathy, narcissism, and Machiavellianism. To measure engagement in sexually coercive behaviours, we developed a novel scale where participants are provided with realistic hypothetical sexual/dating scenarios, and participants were asked how likely they were to engage in a list of behavioural responses. We created this measure as most developed scales investigate more extreme forms of sexual aggression (e.g., rape), while we wanted to investigate more subtle sexually coercive behaviour that people may engage or experience in daily life, or even perceived as acceptable given cultural norms. Previous research has found that males are more likely the perpetrator of sexually coercive behaviour (McHoskey, 2000), as such, our study focuses on a male sample. We hypothesise that 1) endorsement of sexual coercion will positively predict engagement in sexually coercive behaviour, and 2) traits associated with an accelerated life history strategy (high mating effort, high aggression, low SES, and high levels of psychopathy, narcissism, and Machiavellianism) will positively moderate this association.

## **Methods**

### **Participants**

A total sample of 331 online volunteers were recruited for the study from various social networking sites (e.g., Twitter). Participants were not compensated. Participants who reported being women (94 participants), reported not being exclusively heterosexual (21 participants), or were missing responses on more than 2 items on any one scale (61 participants) were excluded from analysis. This resulted in a final sample of 155 men ( $M = 26.60$  years,  $SD = 8.19$  years). The majority of participants resided in the UK or Ireland (127 participants).

## Measures

Each participant completed the following measures. The order of the measures, and the order of items within each measure were randomised for each participant.

**The Sexual Coercion Scenarios Measure.** We created the Sexual Coercion Scenarios Measure to assess subtle sexually coercive behaviour. The measure consisted of four hypothetical scenarios. Each scenario involved participants reading a short paragraph, followed by 10 possible responses for each scenario. Responses varied in sexual coerciveness and social desirability. For example, one scenario involved the reader meeting an attractive woman at a party, spending most of the night talking and flirting with her, but after a while she tells the reader that she feels too drunk and has decided to go home with her friends (see appendix for full wording). An example of a coercive response is ‘You would tell her “go on... just one more drink!”’, while a non-coercive response is ‘You would decide the woman was being a tease and decide not to see her again.’. For each reaction, participants indicated how accurate/likely each response would be for them on a 5-point scale (1 = ‘Not accurate at all’, 2 = ‘Slightly accurate’, 3 = ‘Somewhat accurate’, 4 = ‘Very accurate’, and 5 = ‘Extremely accurate’). Development of the measure was informed by a pilot survey, in which 29 participants (18 men and 11 women), rated how realistic and sexually coercive each scenario/response was, with only scenarios/responses that were consistently rated as realistic were retained. The cumulative ratings for each response to the scenarios were used for analysis, with sexually coercive items scoring positively and non-coercive items were reverse coded. Internal consistency for the measure was high (Cronbach’s Alpha = .89). See the appendix for the full measure and scoring information.

**Updated Illinois Rape Myth Acceptance Scale (McMahon & Farmer, 2011).** The Updated Illinois Rape Myth Acceptance Scale was used to measure endorsement of sexually coercive behaviour across four subscales: ‘She asked for it’, ‘He didn’t mean to’, ‘It wasn’t really rape’, and ‘She lied’. There are 22 items in total, to which participants responded using a five-point



scale to express to what extent they agreed or disagreed with the statements. For the purpose of this study, scores on the measure were reverse-coded to ease interpretation of the results, such that higher scores indicated higher levels of rape myth acceptance and greater endorsement of sexually coercive behaviour. Internal consistency was high (Cronbach's Alpha = .92).

**The Mating Effort Scale (Rowe, Vazsonyi, & Figueredo, 1997).** The Mating Effort Scale was used to measure individual differences in mating effort. The scale consisted of 10 items (e.g., 'I would rather date several girls at once than just one'), to which participants rated their agreement using a five-point Likert scale. Higher scores on the Mating Effort Scale indicated greater investment in mating effort. Internal consistency was acceptable (Cronbach's Alpha = .71).

**The Buss-Perry Aggression Questionnaire (Buss & Perry, 1992).** The Buss-Perry Aggression Questionnaire is a 29-item questionnaire used to measure aggressive traits in participants. It has 4 subscales: physical aggression, verbal aggression, anger, and hostility. Participants used a 5-point Likert scale to respond to how characteristic the statements were in describing themselves. An example includes 'Some of my friends think I am a hothead'. Higher scores indicate higher levels of aggression. Internal consistency was high (Cronbach's Alpha = .85).

**The MacArthur Scale of Subjective Social Status (Adler, Epel, Castellazzo, & Ickovics, 2000).** The MacArthur Scale of Subjective Social Status was used to measure participants' perceived SES. Participants were shown an image of a ladder with 10 rungs and were told that the bottom of the ladder represents the lowest socioeconomic status in their country, while the top rung represents the highest status in their country. Participants were asked where they would place themselves on this ladder relative to others in their country, using a slider to choose from 1-10.

**The Short Dark Triad (Jones & Paulhus, 2014).** The Short Dark Triad measures trait levels of psychopathy, narcissism, and Machiavellianism. The measure consisted of 27 items, each trait consisting of 9 items (e.g., 'I like to get revenge on authorities' (psychopathy), 'People see me as a natural leader' (narcissism), 'Most people can be manipulated' (Machiavellianism)).

Participants used a five-point Likert scale to respond to how strongly they agreed or disagreed with

the statements. Participants rated their agreement to the items on a 5-point scale. Each dark triad trait was considered in the analysis separately, with higher scores indicated greater levels of the respective trait. Overall internal consistency was acceptable (Cronbach's  $\alpha = .76$ ).

**Additional Measures.** Participants also completed The Revised Sexual Experiences Survey for Perpetrators (Koss et al., 2008), which measures participants' past sexual behaviour and gauges to what extent participants have used sexually coercive strategies. This was intended to be used as an additional outcome variable; however, responses lacked variability and therefore are not analysed (for a possible score ranging from 0 to 135, the median score was 1). This likely is due to a combination of social desirability effects and because behaviours on this measure are more extreme and sexually aggressive compared to that on the Sexual Coercion Scenarios Measure, which may not be prevalent in the general population. The full dataset, including responses to this measure, are provided at <https://osf.io/2ntf4/>.

## Statistical Analysis

A linear regression analysis was conducted to examine the association between the endorsement of sexually coercive behaviour and engagement in sexually coercive behaviour. The outcome variables were scored on the Sexual Coercion Scenarios Measure, while endorsement of sexual coercion and each of the life history traits were entered as predictors. Moderation was assessed via interaction terms between each life history trait and endorsement of sexually coercive behaviours. Participants with missing data for more than two items on any one scale were removed from analysis, while those with two or less missing items on a scale had the mean for the missing items imputed as their score. Outliers were winsorised to 3SDs from the mean. The full dataset and analysis code is available at <https://osf.io/2ntf4/>.

## Results

Correlations between predictors were all less than .70, indicating that multicollinearity was not an issue (all  $r_s < .52$ ). Linear regression analysis indicated that 35.02% of variance of sexually coercive behaviour could be explained by the model,  $F(13, 141) = 5.86, p < .001$ . Regression coefficients from the linear regression model are reported in Table 1. As expected, greater endorsement of sexual coercion was associated with sexually coercive behaviour. There were also significant, positive main effects of mating effort, SES, and Machiavellianism. Machiavellianism also significantly interacted with endorsement to predict coercive behaviour, such that those who scored higher in Machiavellianism showed a stronger association between endorsement and engagement in sexually coercive behaviour (see Fig 1). Interestingly, a negative interaction was found between narcissism and endorsement, such that the association between endorsement and engagement in sexually coercive behaviour was weaker for those higher in narcissism (see Fig. 2). There were no other significant main effects or interactions.

Table 1. Regression coefficients from the linear regression analysis predicting sexually coercive behaviour as measured by the Sexual Coercion Scenarios Measure.

	$\beta$	t	p-value
Mating Effort	.23	2.53	.012*
SES	.23	2.86	.005**
Aggression	.06	.70	.485
Psychopathy	-.06	-.64	.522
Narcissism	-.08	-1.00	.320
Machiavellianism	.28	2.98	.003**
Endorsement	.24	3.31	.002**
* Mating Effort	-.09	-.85	.397
* SES	.12	1.58	.116
* Aggression	.01	.16	.877
* Psychopathy	-.07	-.64	.526
* Narcissism	-.21	-2.68	.008**
* Machiavellianism	.30	2.74	.007**

\*  $p < .05$  \*\*  $p < .01$

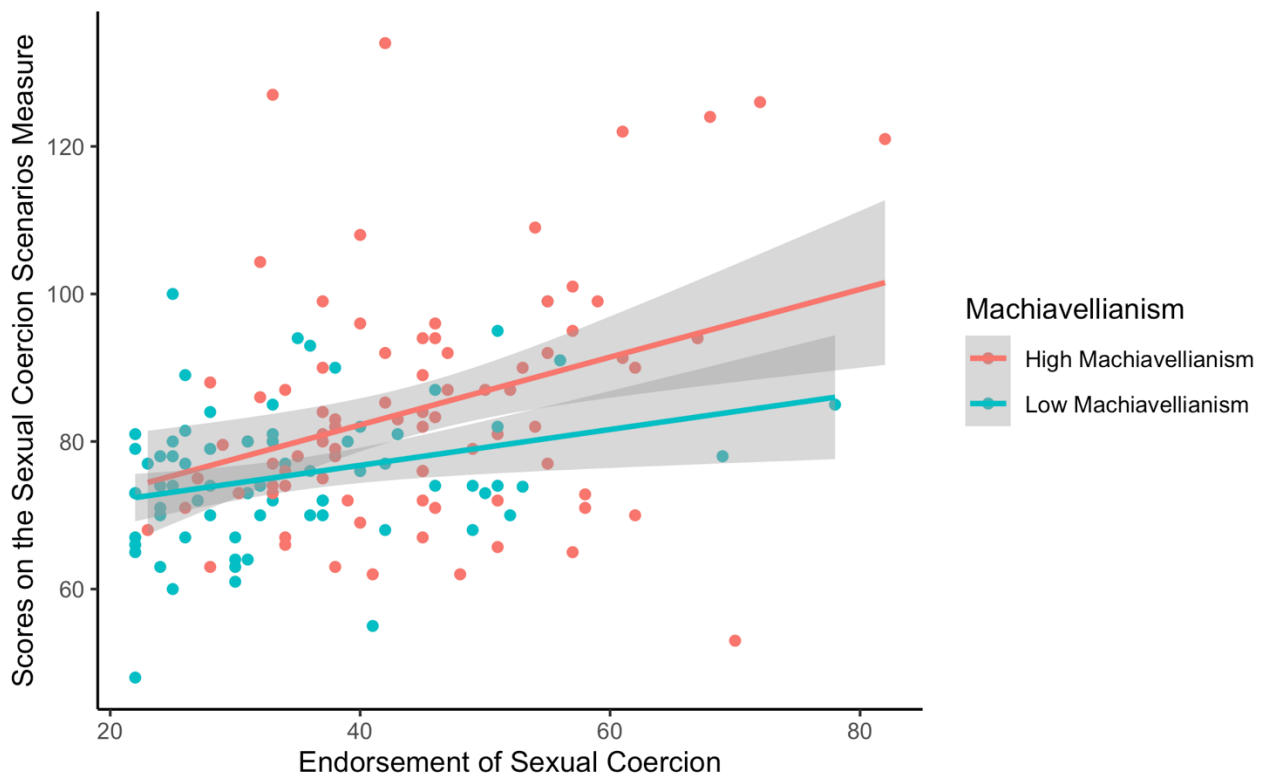


Figure 1. Association between endorsement and engagement in sexual coercion and Machiavellianism.

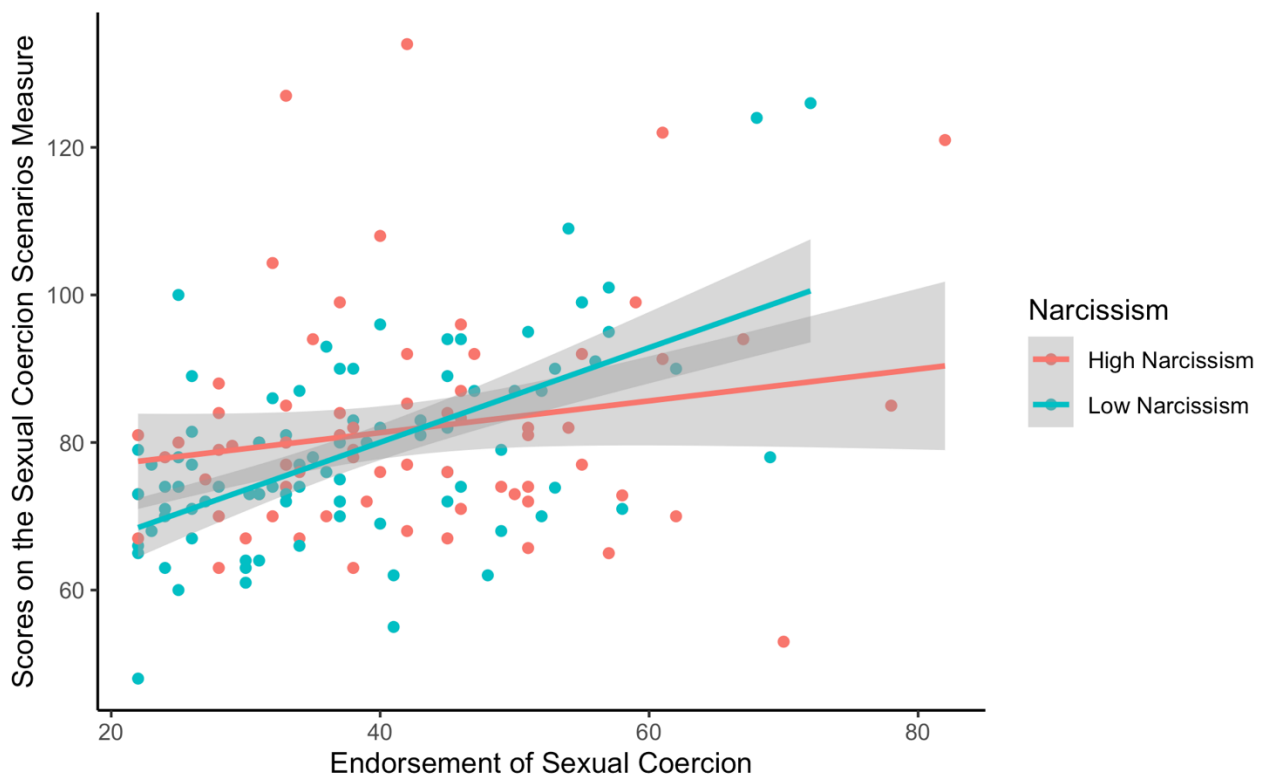


Figure 2. Association between endorsement and engagement in sexual coercion and narcissism.

## Discussion

Here, we examined whether the endorsement of sexually coercive behaviour can predict the engagement in sexual coercion, and whether this association is moderated by individual differences identified from a life history perspective. These include individual differences in mating effort, aggression, SES, and the dark triad traits of psychopathy, narcissism, and Machiavellianism. The results found that endorsement of sexually coercive behaviour positively predicted engagement in sexual coercion, and that this association was moderated by Machiavellianism and narcissism.

Mating effort had a significant, positive main effect on predicting sexually coercive behaviour. This suggests that males who have a preference for short-term mating strategies are more likely to engage in sexually coercive behaviour, consistent with previous research and what is expected according to life history theory (Egan & McCorkindale, 2007; Gladden et al., 2008). However, we did not find a significant interaction between mating effort and endorsement of sexual coercion in predicting sexually coercive behaviour.

Across all three dark triad traits, there was no consistent pattern in predicting sexual coercion. Only Machiavellianism showed a significant positive main effect with sexually coercive behaviour, with no main effects of psychopathy or narcissism. The association between endorsement and engagement in sexual coercion was significantly moderated by narcissism and Machiavellianism, but in opposite directions. Higher levels of Machiavellianism was associated with a greater association between endorsement and engagement. A potential explanation for this finding is that Machiavellianism is theorised to be associated with reduced theory of mind and low social intelligence (Paal & Bereczkei, 2007), which could increase the likelihood of misunderstanding the social cues of sexually coercive behaviour, and in turn lead to those higher in Machiavellianism to have a stronger association between endorsement and engagement in sexually coercive behaviour. On the other hand, higher levels of narcissism was associated with a weaker association between endorsement and engagement, which is opposite to what is predicted based on

life history theory (Lamarche & Seery, 2019). Given that narcissism is associated with a pre-occupation of one's social image, individuals high in narcissism may be more aware of socially undesirable behaviour and monitor their responses accordingly, and therefore show less of an association between endorsement and engagement. Explanations provided here are speculative, however. Our findings add to the previous research investigating the link between the dark triad traits and sexual coercion, which overall have produced mixed results. Some work finding that all three traits predict sexual coercion (e.g., Lyons, Houghton, Brewer, & O'Brien, 2020), some suggesting that Machiavellianism and psychopathy (but not narcissism) uniquely predict sexual coercion and sexual violence (e.g., Pavlovic, Markotic, & Bartolin, 2019), while others still found an association with a dark triad factor, but did not find any significant effects when examining each trait individually (Figueredo et al., 2016).

Contrary to predictions, aggression was not associated with sexually coercive behaviour, nor did it influence the interaction between endorsement and engagement. One possibility is that previous research has focused on linking aggression with more extreme sexually aggressive behaviours, such as rape, while the current study focused on investigating more subtle forms of sexual coercive tactics. This perhaps suggests aggression may not be an important predictor for nonphysical coercion tactics or coercive tactics that cultural norms deem as acceptable (however, see DeGue & DiLillo, 2004).

Interestingly, there was a positive, main effect of SES on sexually coercive behaviour. This is contrary to our predictions, as low SES is consistently associated with an accelerated life history strategy (Brumbach et al., 2009). A potential explanation is that men with high SES may be more willing to engage in sexual coercion, as sexual coercion can involve an abuse of power and authority (Lyndon et al., 2007). Another possibility is that previous research overrepresents engagement in sexual aggressiveness of those with low SES, while simultaneously underrepresenting those with higher SES. It should also be noted that the current study measured

subjective perceptions of one's own SES while using a more objective measure of SES may produce varying results.

Overall, there was no consistent pattern between traits associated with an accelerated life history strategy and sexually coercive behaviour. Some findings were consistent with predictions (mating effort and Machiavellianism), other traits showed no association (aggression and psychopathy), while others still showed the opposite pattern (SES and narcissism). This may suggest that other factors, such as social/cultural influences (e.g., social rejection; Lamarche & Seery, 2019) are potentially better explanations for predicting engagement in sexually coercive behaviour, and further research is needed to fully understand the role of life history.

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