

Original Article

Predicting Preferences for Sex Acts: Which Traits Matter Most, and Why?

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Abstract: Several dispositional traits have been examined in mating contexts by evolutionary psychologists. Such traits include life history strategy, sociosexuality, and the Big Five. Recently, scholars have examined the validity and predictive utility of mating intelligence, a new construct designed to capture the cognitive processes that underlie mating psychology. The current research employed a battery of dispositional traits that include all these constructs in an effort to predict preferences for different kinds of sex acts. Sexual acts vary wildly, and the ability to predict this variability may well hold an important key to underlying sexual strategies. A sample of 607 young adults (144 males and 463 females) completed measures of each of these traits as well as a measure of preference for specific sex acts (along with providing information on their sexual orientation). The traits predicted variability in preference for sex acts – with mating intelligence being the most predictive (for instance, mating intelligence was positively related to preference for vaginal intercourse across the sexes). Sex differences emerged (e.g., males show a stronger preference for anal sex than do females). Discussion focuses on (a) sex differences in preference for sex acts along with (b) why the trait variables predicted preferences in sex acts.

Keywords: sexual preferences, personality, life history strategy, sociosexuality, mating intelligence

Introduction

Historically, evolutionary psychologists who study mating behavior have focused on describing human universals and sex differences that predict mating outcomes (e.g., Buss, 2003; Gangestad, Thornhill, and Garver-Apgar, 2005; Haselton and Buss, 2000; Schmitt, 2008). While this research generally is premised on the idea that mating behaviors

should ultimately facilitate reproductive success of the individual engaging in the behavior (Buss, 2003), a strong trend has moved toward appreciating nuance and variability in mating strategies across individuals (e.g., Buss and Schmitt, 1993; Gangestad and Simpson, 2000). Thus, the current state of the field includes conceptions of mating behaviors that represent a plurality of strategies – a fact that maps onto the idea that in any sexually reproducing species, there are multiple behavioral routes that can lead to successful reproduction (see Geher and Kaufman, 2011).

In the field of personality psychology, there is a long-standing tradition of conceptualizing and operationally defining broad behavioral tendencies that show marked and consistent variability across individuals. In recent years, evolutionary psychologists who study mating have made good use of this body of scholarship by examining how such individual variability may reflect variability in underlying mating strategies (see Nettle and Clegg, 2008). As an example, Nettle and Clegg (2008) examine each of the Big Five personality traits in terms of costs and benefits in the mating domain. On one hand, for example, extraversion seems to have obvious social and reproductive benefits compared with introversion. However, introversion's high incidence in human populations begs the question of why introversion survives across generations. Nettle and Clegg (2008) point out that extraverts are more successful in certain short-term mating contexts (e.g., with extraverts turning up more sexual partners compared with introverts), but not more successful in long-term mating context (Nettle, 2005, 2011; Schmitt, 2004) – and extraversion often corresponds to a risky behavioral strategy, leading to higher frequencies of injury and premature death (Nettle, 2005), obvious costs in the evolutionary game of leaving descendants across generations.

Other dispositional qualities have been investigated with evolutionary reasoning more explicitly in mind. Simpson and Gangestad's (1990) sociosexuality construct corresponds to variability in proclivity toward uncommitted sexual encounters – essentially a proxy for a tendency toward the employment of short-term mating tactics. Similarly, life history strategy (see Figueredo, Vásquez, Brumbach, and Schneider, 2004) captures variability in the tendency toward “high K” behaviors which are optimal in safe and stable environments versus “low K” behaviors which seem to assume an unstable environment and which demand quicker reproductive behaviors – and, thus, are consistent with a short-term mating strategy.

Both sociosexuality and life history strategy have recently been examined vis à vis the nature of personality. Using data from the International Sexuality Description Project, Schmitt and Shackelford (2008) found that sociosexuality was negatively related to neuroticism, agreeableness, and conscientiousness and positively related to extraversion in men. In women, sociosexuality was negatively correlated with agreeableness and conscientiousness and positively correlated with extraversion and openness (Schmitt and Shackelford, 2008). Further, a tendency toward a slow life history strategy (i.e., *high K*) has been found to correspond to extraversion, agreeableness, conscientiousness, emotional stability (i.e., low neuroticism), and openness (Figueredo, Vásquez, Brumbach, and Schneider, 2004, 2007; Gladden, Figueredo, and Jacobs, 2009).

Sociosexuality and life history strategy, also, seem to be related to each other. For instance, Kruger and Fisher (2008) found that unrestricted sociosexuality corresponds to

several attributes of a fast life history strategy (i.e., *low K*), including the number of sex partners an individual has had in past 12 months, the number of one-time sex partners an individual has had, and the number of times an individual has cheated.

Most recently, a set of studies has explored the empirical nature of mating intelligence (Geher and Miller, 2008), which is comprised of the set of cognitive abilities that underlie the mating domain, and which vary in a trait-like manner across individuals. The mating intelligence Scale (Geher and Kaufman, 2007) includes items that capture several facets of this construct, including cross-sex mind-reading abilities, mating-relevant deception, and effectiveness of behavioral courtship display (among others). Recent studies have found that mating intelligence predicts mating-relevant outcomes in evolutionarily predictable ways. Specifically, males who are higher in mating intelligence are more likely than other males to have had “hook-up” experiences (i.e., uncommitted sexual relations involving any intimate act from kissing to intercourse) with strangers, acquaintances, and friends; females higher in mating intelligence were only more likely than other females to have had more “hook-up” experiences with acquaintances (O’Brien, Geher, Gallup, Garcia, and Kaufman, 2010).

The current study examined a facet of mating that has been understudied in past research. Namely, this research examines predictors of preferences for different sexual acts (e.g., vaginal, oral, and anal intercourse). Human sexual behaviors include a broad repertoire of acts, even though vaginal intercourse is clearly the obviously evolutionarily adaptive route to reproductive success.

The enormous variability in human sex acts is crucial from an evolutionary perspective – particularly given the fact that all possible behavioral acts are mating-relevant and have some possible bearing on reproductive success. From kissing and handholding to receiving oral sex – to various forms of vaginal intercourse – sexual acts in humans have important implications for understanding our complex mating psychology (see Fisher, 1994, 2004). Some sexual acts seem to be an important part of human courtship – such as kissing (Hughes, Harrison, and Gallup, 2007). In fact, Miller (2000) argues that all sexual acts that take place in the early part of forming a pairbond have an important role in mate-assessment. Further, perhaps most importantly, only vaginal intercourse has the potential to lead to reproductive success – but many other forms of sexual behavior typify intimate relationships in our species. In addition, other species, notably chimpanzees and bonobos, the closest phylogenetic relatives of *homo sapiens*, engage in nonreproductive sex acts, including self-masturbation, genital rubbing, oral sex, and anal sex (Wrangham, 1993). For these reasons, understanding the high level of variability in sexual acts and preferences for different sexual acts is crucial in understanding human nature.

One set of related studies is found in the work of Zeifman and Hazan (1997), who explored adult attachment styles as they relate to different sexual acts. In their work, they found that avoidantly attached individuals were less likely to engage in missionary style vaginal intercourse. This finding (and other, related findings documented by Zeifman and Hazan) suggests that a preference for “alternative” sex acts may serve to reduce the likelihood of pairbonding – they may be less likely to activate parts of the brain that facilitate pair bond development (see Fisher, 2004). The current research expands on this past work, to see if the other dispositional variables described herein predict preferences for

different sex acts. Accordingly, the current study sought to address the following:

1. Of the Big Five personality variables, extraversion is expected to predict markers of short-term mating strategies (e.g., a high overall preference for a variety of sex acts and preferences for non-vaginal intercourse).

2. A slow life history strategy (i.e., *high K*) is predicted to correspond to a preference for vaginal intercourse – a proxy for long-term mating strategy.

3. High sociosexuality is predicted to map onto markers of short-term mating strategies (i.e., high overall preference for a variety of sex acts and specific preferences for non-vaginal acts).

4. Mating intelligence is expected to uniquely predict variability in preferences for sex acts. As mating intelligence is a relatively new variable, such an outcome alone would help validate this construct. More specifically, mating intelligence is predicted to correspond to markers of both short and long-term mating (as mating intelligence is grounded in the principle of “strategic flexibility” and individuals high in this construct should show effectiveness across mating contexts).

5. We explored sex differences in preferences for different sexual acts.

Materials and Methods

Participants

A total of 607 total participants with a mean age of 21.20 years ($SD = 4.93$, $Range = 18-75$.) from a comprehensive state university in New York started the survey (subsets of this total sample completed different subsections) which was IRB approved. There were 144 males and 463 females included in the sample. For sexual orientation, 512 participants reported being heterosexual and 95 participants reported being homosexual or bisexual. Of those reporting virginity statuses, 92 were virgins and 406 were non-virgins. A subsample of participants earned subject pool credit toward their academic program and the rest of the sample who completed the survey were volunteers.

Measures

Life History: Arizona Life History Battery (ALHB) (Figueredo et al., 2006). The Mini-K of the ALHB, a 20-item measure, was used to assess life history strategy. The items, such as “I often make plans in advance” and “I often get emotional support and practical help from my blood relatives,” were scored on a seven-point scale from -3 (disagree strongly) to +3 (agree strongly). The Cronbach’s α for the sample was .72.

Sociosexuality Orientation Inventory (SOI-R) (Penke and Asendorpf, 2008). The SOI-R is a nine-item scale that includes three subscales, the Behavior, Attitude, and Desire scales. Items are coded on a nine-point scale from 1 (strongly disagree) to 9 (strongly agree). The Cronbach’s α for the sample was .82.

Personality: The Big Five Inventory (BFI) (John, Naumann, and Soto, 2008). The BFI is a 44-item self-report measure of personality and includes subscales of extraversion, neuroticism, agreeableness, conscientiousness, and openness. Responses were scaled on a five-point scale from 1 (disagree strongly) to 5 (agree strongly). The Cronbach’s α for the entire scale was .74 and for the subscales were .85 for extraversion, .83 for neuroticism, .75

for agreeableness, .77 for conscientiousness, and .78 for openness.

Mating Intelligence (Geher and Kaufman, 2007). The mating intelligence scale included two versions, one for each sex. Each version had 24 true/false questions and included items such as “I am good at picking up signals of interest from women” and “I can attract women, but they rarely end up interested in me sexually” for males and “If I wanted to make my current guy jealous, I could easily get the attention of other guys” and “I am usually right on the money about a man's intentions toward me” for females. The Cronbach's α for the male version of the scale was .77 and for the female version of the scale was .61.

Sexual Preferences. Preferences for self-masturbation, masturbation with a partner, receiving oral sex, performing oral sex, vaginal sex, and anal sex were assessed on a seven-point scale from 1 (strongly dislike this act/would not engage in this act) to 7 (strongly like this kind of act).

Preference for a Variety of Sex Acts. The preference for a variety of sex acts was a composite variable composed of the six sexual preferences questions. The Cronbach's α was .65.

Procedure

A survey examining life history strategy, sociosexuality, the Big Five, mating intelligence, and preferences for certain sex acts (i.e., self-masturbation, masturbation with a partner, receiving oral sex, performing oral sex, vaginal sex, and anal sex) was administered to participants using Surverymonkey.com online survey software. The URL for the survey was distributed via email through school-wide student listservs.

Results

Means and standard deviations for the predictor and sexual-preference variables are presented in Table 1. For independent samples t-tests, between males and females see Table 2. Females ($M = 1.14$, $SD = .62$) had significantly higher (more “K”) life history scores than males ($M = .89$, $SD = .73$; $t(510) = -3.62$, $p < .01$); thus, females tended to score more as slow life history strategists compared with males. However, males ($M = 36.40$, $SD = 13.30$) had significantly higher scores on sociosexuality than females ($M = 27.81$, $SD = 11.15$; $t(431) = 6.31$, $p < .01$); indicating that males tended to be more unrestricted sociosexually than females. Of the Big Five traits, females were significantly more neurotic (*Females:* $M = 3.32$, $SD = .77$; *Males:* $M = 2.83$, $SD = .78$; $t(519) = -6.12$, $p < .01$) and agreeable (*Females:* $M = 3.81$, $SD = .63$; *Males:* $M = 3.65$, $SD = .62$; $t(514) = -2.47$, $p < .01$) than males. Among the sexual-preference variables, males were more likely to prefer self-masturbation (*Females:* $M = 4.93$, $SD = 1.93$; *Males:* $M = 5.88$, $SD = 1.24$; $t(487) = 4.95$, $p < .01$), masturbation with a partner (*Females:* $M = 4.21$, $SD = 2.03$; *Males:* $M = 4.84$, $SD = 1.73$; $t(483) = 2.92$, $p < .01$), performing oral sex (*Females:* $M = 4.62$, $SD = 1.87$; *Males:* $M = 5.17$, $SD = 1.93$; $t(482) = 2.68$, $p < .01$), receiving oral (*Females:* $M = 5.62$, $SD = 1.71$; *Males:* $M = 6.39$, $SD = .93$; $t(479) = 4.47$, $p < .01$), and anal sex (*Females:* $M = 2.15$, $SD = 1.64$; *Males:* $M = 3.84$, $SD = 2.06$; $t(480) = 8.92$, $p < .01$) compared to females.

Table 1. Descriptive statistics for predictor and sexual-preference variables across sexes

Variable	<i>N</i>	<i>Mean</i>	<i>SD</i>
Life History ¹	572	1.08	.66
Sociosexuality ²	433	29.65	12.15
Extraversion ³	521	3.15	.82
Neuroticism ³	521	3.21	.80
Agreeableness ³	516	3.78	.63
Conscientiousness ³	522	3.56	.64
Openness ³	522	3.84	.60
Mating Intelligence ⁴	566	12.02	3.79
Age at virginity loss ⁵	401	16.59	1.97
Pref. self masturbation ⁶	489	5.15	1.84
Pref. masturbation with partner ⁶	485	4.35	1.98
Pref. receiving oral sex ⁶	481	5.79	1.60
Pref. performing oral sex ⁶	484	4.75	1.90
Pref. anal sex ⁶	482	2.54	1.88
Pref. vaginal sex ⁶	485	6.33	1.27
Pref. variety of sex acts ⁷	490	28.59	6.84

¹Higher scores correspond to a slow life history strategy (*Range* = -3-3). ²Higher scores indicate a more unrestricted sociosexuality (*Range* = 0-81). ³Higher scores indicate individual is high on trait (*Range* = 1-5). ⁴Higher scores indicate higher mating intelligence (*Range* = 0-24). ⁵Age in years. ⁶Lower scores indicate a strong dislike of act or unwillingness to engage in it (*Range* = 1-7). ⁷Higher scores indicate stronger sex drive (*Range* = 6-42).

Correlations among Predictor Variables

Given the high number of variables and questions included in this study, a large number of correlation analyses were conducted. Clearly, this fact has implications for increasing the probability of a Type-I error. As such, we are using a relatively conservative alpha level of .01 for findings we demarcate as *significant*. Findings with probability values that are between .01 and .05 are demarcated as *trends*. Importantly, trends, compared with significant findings, need to be approached with more caution in making inferences to the broader population of interest, all adult humans.

Correlations between life history strategy, sociosexuality, mating intelligence, and the Big Five are presented in Table 3. Life history strategy was positively correlated with mating intelligence ($r(511) = .14, p < .01$), extraversion ($r(499) = .25, p < .01$), agreeableness ($r(496) = .35, p < .01$), conscientiousness ($r(501) = .33, p < .01$), and openness ($r(502) = .12, p < .01$) and negatively correlated with sociosexuality ($r(418) = -.22, p < .01$) and neuroticism ($r(500) = -.11, p < .05$). Therefore, individuals who are slow life history strategists are generally high in mating intelligence, have a restricted sociosexual orientation, and are extraverted, agreeable, conscientious, open, and emotionally stable (i.e., low in neuroticism).

Sociosexuality was negatively correlated with neuroticism ($r(424) = -.14, p < .01$), agreeableness ($r(421) = -.10, p < .05$), and conscientiousness ($r(425) = -.12, p < .01$);

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indicating that sociosexually unrestricted individuals generally are not as neurotic, agreeable, nor conscientious as sociosexually restricted individuals. Among the Big Five, extraversion and openness were positively correlated with mating intelligence ($r(520) = .37, p < .01$ and $r(521) = .18, p < .01$, respectively), and neuroticism was negatively related to mating intelligence ($r(520) = -.13, p < .01$). Thus, generally, individuals high in mating intelligence tend to be extraverted and open to experience, but not neurotic.

Table 2. Means of predictor and sexual-preference variables among males and females

Variable	Female		Male		<i>t</i>
	<i>N_F</i>	Mean (<i>SD</i>)	<i>N_M</i>	Mean (<i>SD</i>)	
Life History ¹	397	1.14 (.62)	115	.89 (.73)	-3.62**
Sociosexuality ²	340	27.81 (11.15)	93	36.40 (13.30)	6.31**
Extraversion ³	401	3.16 (.79)	120	3.13 (.91)	-0.42
Neuroticism ³	401	3.32 (.77)	120	2.83 (.78)	-6.12**
Agreeableness ³	402	3.81 (.63)	114	3.65 (.62)	-2.47**
Conscientiousness ³	404	3.59 (.64)	118	3.47 (.66)	-1.85
Openness ³	405	3.86 (.60)	117	3.80 (.71)	-0.88
Mating Intelligence ⁴	436	12.15 (3.56)	130	11.60 (4.49)	-1.45
Age at virginity loss ⁵	310	16.68 (1.85)	91	16.31 (2.30)	-1.57
Pref. self masturbation ⁶	377	4.93 (1.93)	112	5.88 (1.24)	4.95**
Pref. masturbation with partner ⁶	375	4.21 (2.03)	110	4.84 (1.73)	2.92**
Pref. receiving oral sex ⁶	372	5.62 (1.71)	109	6.39 (.93)	4.47**
Pref. performing oral sex ⁶	375	4.62 (1.87)	109	5.17 (1.93)	2.68**
Pref. anal sex ⁶	373	2.15 (1.64)	109	3.84 (2.06)	8.92**
Pref. vaginal sex ⁶	375	6.34 (1.20)	110	6.32 (1.47)	-0.15
Pref. variety of sex acts ⁷	378	27.63 (6.71)	112	31.83 (6.31)	5.90**

* $p < .05$, ** $p < .01$.

Correlations between Predictor and Sexual-Preference Variables across the Sexes

The correlations between life history strategy, sociosexuality, mating intelligence, the Big Five, and sexual-preference variables are presented in Table 4. Life history strategy was negatively related to the preference for anal sex ($r(482) = -.13, p < .01$); thus, most slow life history strategists did not report liking to engage in anal sex. Mating intelligence was positively related to the preference for performing oral sex ($r(483) = .11, p < .05$), receiving oral sex ($r(480) = .18, p < .01$), vaginal sex ($r(484) = .23, p < .01$), and the preference for a variety of sex acts ($r(489) = .17, p < .01$). Sociosexuality was positively correlated to the preference for self-masturbation ($r(399) = .35, p < .01$), masturbation with a partner ($r(396) = .12, p < .05$), performing oral sex ($r(394) = .15, p < .01$), receiving oral sex ($r(392) = .24, p < .01$), vaginal sex ($r(395) = .21, p < .01$), anal sex ($r(393) = .21, p < .01$), and the preference for a variety of sex acts ($r(400) = .32, p < .01$). These correlations indicate that being sociosexually unrestricted corresponds to preferences for all of the sex acts examined. Extraversion was positively correlated with the preference for receiving oral sex ($r(469) = .10, p < .05$), neuroticism was negatively related to the preference for receiving oral sex ($r(469) = -.10, p < .05$), and conscientiousness was negatively related to the preference for anal sex ($r(471) = -.10, p < .05$). Agreeableness was negatively correlated to the preference for self-masturbation ($r(473) = -.10, p < .05$) and anal sex

($r(466) = -.12, p < .05$) and openness was positively correlated to the preference for self-masturbation ($r(480) = .10, p < .05$), performing oral sex ($r(475) = .16, p < .01$), and the preference for a variety of sex acts ($r(481) = .12, p < .01$).

Table 3. Correlations among predictor variables across the sexes

	1	2	3	4	5	6	7
1. Life History							
2. Sociosexuality	-.22**						
3. Extraversion	.25**	.03					
4. Neuroticism	-.11*	-.14**	-.19**				
5. Agreeableness	.35**	-.10*	.14**	-.23**			
6. Conscientiousness	.33**	-.12**	.12**	-.18**	.15**		
7. Openness	.12**	.04	.13**	-.05	.21**	.05	
8. Mating Intelligence	.14**	.08	.37**	-.13**	-.01	.07	.18**

* $p < .5$, ** $p < .01$.

Correlations between Predictor and Sexual-Preference Variables among Males and Females

For the correlations between life history strategy, sociosexuality, mating intelligence, the Big Five, and sexual-preference variables among males see Table 5 and among females see Table 6. Among males, life history strategy was negatively correlated with the preference for performing oral sex ($r(109) = -.19, p < .05$); therefore, a slow life history strategy (i.e., *high K*) among males corresponded to a weaker preference for performing oral sex. Sociosexuality was positively correlated with the preference for self-masturbation ($r(86) = .43, p < .01$), anal sex ($r(83) = .35, p < .01$), and the preference for a variety of sex acts ($r(86) = .35, p < .01$); indicating that sociosexually unrestricted men preferred to engage self-masturbation, anal sex, and a variety of sex acts more than sociosexually restricted men. Extraversion was positively correlated with the preference for masturbation with a partner ($r(109) = .23, p < .05$) and neuroticism was positively correlated with the preference for performing oral sex ($r(108) = .23, p < .05$). Mating intelligence was positively correlated to the preference for anal sex ($r(109) = .21, p < .05$) and the preference for a variety of sex acts ($r(112) = .24, p < .05$). The preference for performing oral sex was negatively correlated with conscientiousness ($r(106) = -.20, p < .05$) and was positively correlated with openness ($r(105) = .23, p < .05$).

Among females, sociosexuality was positively related to the preference for self-masturbation ($r(313) = .29, p < .01$), performing oral sex ($r(311) = .13, p < .05$), receiving oral sex ($r(309) = .22, p < .01$), vaginal sex ($r(311) = .25, p < .01$), and the preference for a variety of sex acts ($r(314) = .25, p < .01$); thus, indicating that sociosexually unrestricted females had greater preferences for self-masturbation, performing oral sex, receiving oral sex, vaginal sex, and a variety of sex acts than restricted females. Extraversion was positively correlated to the preference for performing oral sex ($r(364) = .13, p < .05$), receiving oral sex ($r(361) = .14, p < .01$), and vaginal sex ($r(364) = .18, p < .01$). Agreeableness was negatively correlated with the preference for anal sex ($r(363) = -.14, p < .01$) and self-masturbation ($r(367) = -.10, p < .05$). Openness was positively related to

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Table 4. Correlations between predictor and sexual-preference variables across the sexes

	Self-Mast.	Mast. with partner	Perform oral sex	Receive oral sex	Vaginal sex	Anal sex	Variety of Acts
Life History	-.08	-.03	-.05	.02	.01	-.13**	-.08
Sociosexuality	.35**	.12*	.15**	.24**	.21**	.21**	.32**
Extraversion	-.04	.09	.09	.10*	.08	.05	.09
Neuroticism	-.06	.03	.03	-.10*	-.07	-.07	-.03
Agreeableness	-.10*	-.02	.01	-.05	.01	-.12*	-.06
Conscientiousness	-.04	-.03	.01	.02	.08	-.10*	-.04
Openness	.10*	.09	.16**	.03	-.04	.06	.12**
Mating Intelligence	.05	.09	.11*	.18**	.23**	.04	.17**

* $p < .05$, ** $p < .01$. *ns* range from 392-489.

Table 5. Correlations between predictor and sexual-preference variables among males

	Self-Mast.	Mast. with partner	Perform oral sex	Receive oral sex	Vaginal sex	Anal sex	Variety of Acts
Life History	.01	-.12	-.19*	.08	.02	-.02	-.10
Sociosexuality	.43**	.03	.05	.03	.14	.35**	.35**
Extraversion	.03	.23*	-.01	-.03	-.14	.17	.06
Neuroticism	.01	.05	.23*	-.15	-.17	.08	.08
Agreeableness	.05	.05	.08	.06	-.06	.07	.09
Conscientiousness	.07	.04	-.20*	.06	.06	-.12	-.06
Openness	.17	.15	.23*	.12	-.09	.08	.17
Mating Intelligence	.15	.15	.02	.11	.15	.21*	.24*

* $p < .05$, ** $p < .01$. *ns* range from 83-112.

Table 6. Correlations between predictor and sexual-preference variables among females

	Self-Mast.	Mast. with partner	Perform oral sex	Receive oral sex	Vaginal sex	Anal sex	Variety of Acts
Life History	-.07	.02	.03	.05	.01	-.10	-.02
Sociosexuality	.29**	.11	.13*	.22**	.25**	.02	.25**
Extraversion	-.05	.06	.13*	.14**	.18**	.03	.11
Neuroticism	.00	.07	.02	-.02	-.04	.02	.04
Agreeableness	-.10*	-.02	.01	-.05	.04	-.14**	-.07
Conscientiousness	-.05	-.03	.08	.03	.09	-.06	-.01
Openness	.10	.08	.15**	.03	-.02	.08	.13*
Mating Intelligence	.04	.08	.16**	.22**	.26**	-.01	.17**

* $p < .05$, ** $p < .01$. *ns* range from 309-378.

the preference for performing oral sex ($r(370) = .15$, $p < .01$) and the preference for a variety of sex acts ($r(373) = .13$, $p < .05$). Mating intelligence was positively correlated to the preference for performing oral sex ($r(374) = .16$, $p < .01$), receiving oral sex ($r(371) = .22$, $p < .01$), vaginal sex ($r(374) = .26$, $p < .01$), and the preference for a variety of sex acts

($r(377) = .17, p < .01$).

Multiple Regressions Predicting Sexual-Preferences

A series of seven multiple regressions were conducted using SPSS to predict the preference for self-masturbation, masturbation with a partner, performing oral sex, receiving oral sex, vaginal sex, anal sex, and a variety of sex acts from the predictor variables.

A significant amount of variability in the preference for self-masturbation was accounted for by the predictor variables ($R^2 = .17, F(9, 365) = 8.08, p < .01$). Thus, approximately 17% of the variance in an individual's preferences for self-masturbation can be explained by their sex, life history strategy, sociosexuality, personality, and mating intelligence. Table 7 displays the unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable. In terms of individual relationships between the predictor variables and preference for self-masturbation, agreeableness ($t = -2.47, p = .05$), sociosexuality ($t = 5.80, p < .01$), and sex ($t = 2.85, p = .05$) each significantly predicted the preference for self-masturbation; thus, indicating that individuals who have strong preferences for self-masturbation are male, sociosexually unrestricted, and less agreeable than those with weaker preferences.

Table 7. Multiple regression predicting preference for self-masturbation

Predictor Variable	b	$SE(b)$	β	t
Intercept	4.40	1.12		3.92**
Mating Intelligence	.01	.03	.03	.48
Life History	.19	.16	.07	1.18
Openness	.25	.15	.09	1.71
Neuroticism	.03	.12	.01	.23
Conscientiousness	-.11	.15	-.04	-.75
Agreeableness	-.39	.16	-.14	-2.47*
Extraversion	-.12	.12	-.05	-.94
Sociosexuality	.05	.01	.31	5.80**
Sex	.67	.23	.15	2.85*

* $p < .05$, ** $p < .01$

For preference for masturbation with a partner, the predictor variables accounted for a significant portion of the variability ($R^2 = .07, F(9, 362) = 2.73, p < .01$). Therefore, sex, personality, life history strategy, sociosexuality, and mating intelligence accounted for 7% of the variance in preference for masturbation with a partner. For individual unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable see Table 8. Sex ($t = 2.16, p < .05$) and extraversion ($t = 2.33, p < .05$) each individually predicted the preference for masturbation with a partner; suggesting that an individual who has a strong preference for masturbation with a partner is likely to be both male and extraverted.

Table 8. Multiple regression predicting preference for masturbation with a partner

Predictor Variable	<i>b</i>	<i>SE(b)</i>	β	<i>t</i>
Intercept	2.38	1.29		1.85
Mating Intelligence	.03	.03	.05	.81
Life History	.18	.18	.06	.98
Openness	.18	.17	.06	1.08
Neuroticism	.20	.14	.08	1.43
Conscientiousness	-.12	.17	-.04	-.71
Agreeableness	-.28	.18	-.09	-1.53
Extraversion	.33	.14	.13	2.33*
Sociosexuality	.02	.01	.10	1.79
Sex	.58	.27	.12	2.16*

* $p < .05$, ** $p < .01$

Sex, life history strategy, sociosexuality, personality, and mating intelligence significantly accounted for the variance in preference for performing oral sex ($R^2 = .09$, $F(9, 360) = 3.72$, $p < .01$). Nine percent of the variability in preference for performing oral sex was accounted for by the predictor variables. Table 9 presents the unstandardized regression coefficients (*B*), intercept, and standardized regression coefficients (β). Sex ($t = 2.88$, $p < .01$), mating intelligence ($t = 2.13$, $p < .05$), openness ($t = 2.14$, $p < .05$), and sociosexuality ($t = 2.49$, $p < .05$) each individually predicted the preference for performing oral sex. These findings signify that individuals with a strong preference for performing oral sex tend to be male, sociosexually unrestricted, and higher in mating intelligence and openness than individuals with weaker preferences performing for oral sex.

Table 9. Multiple regression predicting preference for performing oral sex

Predictor Variable	<i>b</i>	<i>SE(b)</i>	β	<i>t</i>
Intercept	.37	1.22		.30
Mating Intelligence	.06	.03	.12	2.13*
Life History	-.13	.17	-.05	-.75
Openness	.35	.16	.11	2.14*
Neuroticism	.22	.13	.10	1.69
Conscientiousness	.09	.16	.03	.57
Agreeableness	.09	.17	.03	.49
Extraversion	.06	.14	.02	.42
Sociosexuality	.02	.01	.14	2.49*
Sex	.74	.26	.16	2.88**

* $p < .05$, ** $p < .01$

A significant amount of the variance in preference for receiving oral sex was predicted by the model ($R^2 = .10$, $F(9, 358) = 4.23$, $p < .01$). Thus, 10% of the variance in the preference in receiving oral sex was accounted for by sex, personality, life history strategy, sociosexuality, and mating intelligence. For individual unstandardized regression coefficients (*B*), intercept, and standardized regression coefficients (β) see Table 10. Sex ($t = 5.46$, $p < .05$), mating intelligence ($t = 2.25$, $p < .05$), and sociosexuality ($t = 3.16$, $p < .01$) individually predicted the preference for receiving oral sex; indicating that individuals

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with strong preferences for receiving oral sex generally are male, sociosexually unrestricted, and high in mating intelligence.

Table 10. Multiple regression predicting preference for receiving oral sex

Predictor Variable	<i>b</i>	<i>SE(b)</i>	β	<i>t</i>
Intercept	4.70	1.05		4.48**
Mating Intelligence	.06	.03	.13	2.25*
Life History	.12	.15	-.05	.84
Openness	-.12	.14	-.04	-.83
Neuroticism	-.06	.11	-.03	-.50
Conscientiousness	.07	.14	.03	.52
Agreeableness	-.13	.15	-.05	-.88
Extraversion	.09	.12	.04	.76
Sociosexuality	.02	.01	.18	3.16**
Sex	.59	.22	.15	2.71*

* $p < .05$, ** $p < .01$

For preference for vaginal sex, the predictor variables accounted for a significant portion of the variability ($R^2 = .11$, $F(9, 361) = 4.91$, $p < .01$). Therefore, sex, personality, life history strategy, sociosexuality, and mating intelligence accounted for 11% of the variance in the preference for vaginal sex. For individual unstandardized regression coefficients (*B*), intercept, and standardized regression coefficients (β) for each variable see Table 11. In terms of individual relationships between the predictor variables and the preference for vaginal sex, openness ($t = -2.63$, $p < .01$), sociosexuality ($t = 4.17$, $p < .01$), and mating intelligence ($t = 3.50$, $p < .01$) each significantly predicted preference for vaginal sex. Therefore, individuals who are sociosexually unrestricted and high in openness and mating intelligence are likely to have strong preferences for vaginal sex.

Table 11. Multiple regression predicting preference for vaginal sex

Predictor Variable	<i>b</i>	<i>SE(b)</i>	β	<i>t</i>
Intercept	4.84	.86		5.62**
Mating Intelligence	.07	.02	.20	3.50**
Life History	.03	.12	.02	.25
Openness	-.32	.11	-.14	-2.63**
Neuroticism	-.01	.09	-.01	-.10
Conscientiousness	.22	.12	.10	1.90
Agreeableness	.08	.12	.04	.64
Extraversion	-.02	.09	-.01	-.16
Sociosexuality	.03	.01	.23	4.17**
Sex	-.11	.18	-.03	-.61

* $p < .05$, ** $p < .01$

Sex, life history strategy, sociosexuality, personality, and mating intelligence significantly accounted for the variance in preference for anal sex ($R^2 = .15$, $F(9, 359) = 6.72$, $p < .01$). Fifteen percent of the variability in preference for performing oral sex was accounted for by the predictor variables. Table 12 presents the unstandardized regression

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coefficients (B), intercept, and standardized regression coefficients (β). Only sex ($t = 5.46$, $p < .01$) individually predicted the preference for anal sex; indicating that usually males have stronger preferences for anal sex than females.

Table 12. Multiple regression predicting preference for anal sex

Predictor Variable	b	$SE(b)$	β	t
Intercept	2.59	1.12		2.32*
Mating Intelligence	-.02	.03	-.03	-.61
Life History	-.10	.16	-.04	-.65
Openness	.25	.15	.09	1.67
Neuroticism	-.02	.12	-.01	-.14
Conscientiousness	-.23	.15	-.08	-1.51
Agreeableness	-.26	.16	-.09	-1.65
Extraversion	.13	.12	.06	1.03
Sociosexuality	.01	.01	.08	1.40
Sex	1.29	.24	.30	5.46**

* $p < .05$, ** $p < .01$

A significant amount of variability in the preference for a variety of sex acts was accounted for by the predictor variables ($R^2 = .16$, $F(9, 365) = 7.75$, $p < .01$). Thus, approximately 16% of the variance in an individual's preference for a variety of sex acts can be explained by their sex, life history strategy, sociosexuality, personality, and mating intelligence. Table 13 displays the unstandardized regression coefficients (B), intercept, and standardized regression coefficients (β) for each variable. In terms of individual relationships between the predictor variables and the preference for a variety of sex acts, mating intelligence ($t = 2.34$, $p < .05$), sociosexuality ($t = 5.02$, $p < .01$), and sex ($t = 3.74$, $p < .01$) each significantly predicted the preference for a variety of sex acts. These findings specify that males and individuals who are high in sociosexuality and mating intelligence have strong preferences for a variety of sex acts relative to those who are low on these traits.

Table 13. Multiple regression predicting preference for a variety of sex acts

Predictor Variable	b	$SE(b)$	β	t
Intercept	17.10	4.27		4.01**
Mating Intelligence	.23	.10	.13	2.34*
Life History	.11	.60	.01	.18
Openness	.64	.56	.06	1.14
Neuroticism	.60	.45	.07	1.31
Conscientiousness	-.22	.57	-.02	-.38
Agreeableness	-.54	.60	-.05	-.90
Extraversion	.39	.47	.05	.84
Sociosexuality	.15	.03	.27	5.02**
Sex	3.32	.89	.20	3.74**

* $p < .05$, ** $p < .01$

Discussion

This study expands on prior research that conceptualizes human mating as including a plurality of strategies (Gangestad and Simpson, 2000). Using a battery of evolutionarily relevant dispositional variables, including the Big Five Traits, life history strategy, sociosexuality, and mating intelligence, this study sought to improve our understanding of variability in preferences for different sexual acts.

Dispositional Predictors of Sexual-Preferences

The predictor variables were somewhat inter-correlated and many findings supported the results of past studies. For instance, as expected based on the previous research of Kruger and Fisher (2008), a slow life history strategy corresponded to a restricted pattern of sociosexuality. Further, the findings of Figueredo and his colleagues (2004, 2007; Gladden et al., 2009) relating life history strategy to the Big Five were replicated in another independent sample. In combination, these findings – along with the findings in the current study - suggest that extraversion, agreeableness, conscientiousness, openness, and emotional stability (i.e., low neuroticism) are selected together to form a coordinated slow life history; thus, maximizing the reproductive success of the individual (Gladden et al., 2009).

That said, several intriguing findings emerged – with several of the predictions being supported. Mating intelligence was related to several sexual preferences, including a preference for vaginal intercourse and several forms of non-vaginal intercourse (e.g., performing oral sex). These findings support the conception of mating intelligence as strategic flexibility – corresponding to markers of both long-term (vaginal) and short-term (non-vaginal) kinds of acts. Yet of the sexual-preferences, mating intelligence was a stronger predictor of variability in the preference for vaginal sex than other sex acts; this finding is likely due to the fact that whether, when, and with whom one has vaginal sex has a direct bearing on his or her reproductive success whereas non-vaginal sex acts, such as oral sex, do not.

As predicted, sociosexuality was related to sexual-preferences – and it was not related to just non-vaginal sex acts (i.e., markers of short-term mating), but all sexual-preferences. Specifically, being sociosexually unrestricted corresponded to greater preferences for all of the sex acts across the sexes and sociosexuality was a significant predictor of an individual's preference for self-masturbation, performing and receiving oral sex, and vaginal sex. Furthermore, both sociosexuality and mating intelligence tended to correlate positively with preferences for most acts, which is interesting considering mating intelligence and sociosexuality were uncorrelated with one another.

Contrary to our hypothesis, across both sexes, extraversion did not generally relate to sexual-preferences. However, when analyses were performed separately by sex, extraversion had more of an effect, especially in females, such that high extraversion corresponded with greater preferences for masturbation with a partner in males and for receiving oral sex and vaginal sex in females. In addition, among women, the relationship between extraversion and performing oral sex approached significance.

Also, life history strategy was not particularly predictive of the preferences for the

different sexual acts – except that slow life history strategists tended to be repulsed by anal sex. This relationship is likely due to slow life history strategists' greater regard for social norms and consideration of risk than fast life history strategists since anal sex is still considered to be somewhat taboo and, in the case of the transmission of sexually transmitted infections, more risky than other sex acts.

Regarding preferences for sex acts in general, recall that a composite variable that sums the preferences for all the acts was created (with a Cronbach's alpha of greater than .6) – and we refer to this variable as “the preference for a variety of sex acts” as it represents endorsing a preference for each and every sexual act included here. Interestingly, the preference for a variety of sex acts corresponded to both being unrestricted sociosexually and to having a fast life history strategy. Mating intelligence was also related to the preference for a variety of sex acts, such that, individuals high in mating intelligence generally indicated preferences for multiple sex acts. Perhaps an underlying facet of mating intelligence pertains to having a relatively open mind regarding sex acts – a pattern that may well facilitate increased high-quality sexual opportunities.

Sex Differences in Sexual-Preferences

In addition to describing the predictors of the correlates of preferences for different sex acts, our analyses examined differences in the dispositional variables and preferences for the different sex acts as a function of biological sex. Congruent with previous research (Schmitt, 2003, 2005), males oriented toward a more short-term mating strategy than females and females were oriented toward a long-term mating strategy; with males endorsing *lower K* life history strategies and more unrestricted sociosexual orientations than females.

Regarding sex differences in preferences for different sex acts, the story essentially is that males like every sex act more than females do – with the exception of vaginal intercourse (which showed no significant sex difference). As Baumeister, Catanese, and Vohs (2001) suggest, based on indicators of sexual motivation, including frequency of sexual fantasies and self-masturbation, desired frequency of sexual intercourse, and desired number of sex partners, among other factors, these findings can perhaps be attributed to men possessing a stronger sex drive than women.

Human Motives toward a Plurality of Sexual Positions

Given Zeifman and Hazan's (1997) prior work on sexual positions as they relate to adult attachment styles, we were curious to see how the variables in the current study related to preference for vaginal intercourse compared with preferences for other kinds of acts. This part of the research is based on the idea that preference for vaginal intercourse would be associated with dispositions that reveal an underlying long-term mating strategy.

That human sexuality includes so many acts that are non-vaginal in nature is, superficially, an evolutionary mystery. Some sex acts may actually facilitate vaginal intercourse (e.g., oral sex may act as a proximate lubricating process). Based on the work of Helen Fisher (2004), it seems that some sex acts, such as face-to-face intercourse and kissing, may be more likely to facilitate parts of the brain that promote long-term pairbonding. Perhaps other acts, such as anal sex, therefore, are part of a more short-term

mating strategy. Miller (2000) argues that the plurality of sex acts in our species allows for extended mate assessment – foreplay allows someone to assess several proximate features of a mate or potential mate, including various tactile, olfactory, visual, and auditory stimuli. Given our complex minds and social structures, it may be that variability in sex acts, including several acts that do not directly bear on reproductive success, comprise part of a broad mate assessment suite of behavioral processes.

In the current research, a preference for all the different sex acts corresponded to (a) being male, (b) being unrestricted in sociosexuality, (c) having a relatively fast life history strategy, and (d) having high mating intelligence.

This constellation of correlates is interesting and warrants further research on these patterns. It may be that all these qualities map onto higher sex drive – but given the current data, this inference is not necessarily warranted. Future research should be done to tease apart the variables of preference for a lot of sex acts from sex drive – and to tease apart the paths by which the different predictor variables in this research come to relate to preferences for a variety of sex acts.

Future Directions and Limitations

As in most psychological research, this study included several limitations. First, the sample of this study included a non-random, convenience sample of college students. Therefore, the results obtained may not be generalizable beyond this age and social group. Further, self-report measures subject to demand characteristics and social desirability were used.

Also, the current research could have benefited from including a measure of adult attachment so the results could be directly compared to those of Zeifman and Hazan (1997) – as well as including items to tap nuanced versions of vaginal intercourse, such as missionary position and reverse cowgirl – as these nuances may reveal differential preferences for acts that promote or that disable pair bonding processes. Current ongoing research in the New Paltz Evolutionary Psychology lab is pursuing the relationship between attachment style, mating intelligence, other dispositional variables, and sexual preferences.

In addition, women's use of hormonal forms of birth control and the phase in their menstrual cycle should be examined to see if each of these variables affects female sexual preferences. Previous research has found birth control usage and ovulation status to effect women's sexual and mating behavior (Gangestad, Thornhill, and Garver, 2002; Gangestad, Thornhill, and Garver-Apgar, 2005a, 2005b, 2010; Miller, Tybur, and Jordan, 2007; Pillsworth, Haselton, and Buss, 2004).

Conclusion

In sum, this research sheds light on factors associated with preferences for different sex acts. The fact that sex acts in our species vary so much is clearly important in understanding human sexuality (see Fisher, 2004) – and understanding the factors that predict this variability is obviously crucial in helping us understand human nature. Life history strategy, sociosexuality, the Big Five, and mating intelligence all predict some aspect of preferences in sex acts. To the extent that preference for different sex acts may betray a latent tendency toward long or short-term mating (see Zeifman and Hazan, 1997),

this research provides a novel way of examining the plurality of strategies that humans use in the mating domain.

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