

**SELF-PERCEIVED MATING INTELLIGENCE
PREDICTS SEXUAL BEHAVIOR IN COLLEGE
STUDENTS: EMPIRICAL VALIDATION OF
A THEORETICAL CONSTRUCT**

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ABSTRACT

The cognitive abilities necessary to successfully navigate mating interactions have been termed "Mating Intelligence," a theoretical construct that has only recently begun to receive empirical attention. In two studies using samples of undergraduates, we found that one's responses on a self-report Mating Intelligence measure predicts reproductive behavior in both sexes. In the first, higher scores on the survey were associated with more sexual partners in males and early sexual onset in females. The second study, which measured "hook-ups," or uncommitted sexual encounters, again found higher scores to predict more partners in males. Females with high scores had more hook-ups with males who would be good candidates for long-term relationships. In each study, Mating Intelligence correlated with evolutionarily adaptive decisions for both sexes. While an internal validation found that improvement can be made on this metric, these studies comprise an early step in the empirical study of Mating Intelligence.

INTRODUCTION

The evolutionary competition to pass on one's genes is made apparent by the considerable variation in reproductive success across individuals. Although genetic studies have shown that this variance is low for both males and females in modern human society (Dupanloup, Pereira, Bertorelle, Calafell, Prata, Amorim, et al., 2003), individual differences in reproductive opportunities remain undeniable. While physical attractiveness and body morphology have been shown to account for a significant portion of the variance in reproductive opportunities in humans (Frederick & Haselton, 2007; Gallup, White, & Gallup, 2007; Honekopp, Rudolph, Beier, Liebert, & Muller, 2007; Rhodes, Simmons, & Peters, 2005; Thornhill & Gangestad, 1994), additional research reveals psychological components to mate selection including characteristics such as humor (Kaufman, Kozbelt, Bromley, & Miller, 2008) and creativity (Nettle & Clegg, 2005).

Such observations suggest that a suite of cognitive abilities—including, but not limited to, the mating displays associated with humor and creativity—are tied to the process of finding and acquiring a desirable mate. However, the question remains, in what capacity? Is human mating intelligence simply general intelligence (i.e., the *g*-factor) used for the purposes of courtship display (as suggested by Miller, 2000a)? Or are there other elements of human mating psychology—separate from general intelligence—that, in fact, are specific to the mating domain (see Geher, Miller, & Murphy, 2008)?

Geoffrey Miller has suggested that creativity itself has been sexually selected throughout human history (Miller, 1998, 2000a, 2000b, 2000c, 2001). More recently, Geher and Miller (2008) have proposed the existence of Mating Intelligence, a construct that, while including creativity, would be more broadly influential to fitness. Described as the “mind's reproductive system” (Geher et al., 2008, p. 10), this theoretical construct is a synthesis of mate-choice research that intends to encompass the many challenges an individual may encounter en route to successfully attracting and retaining a mate.

As an initial attempt to define the parameters of this construct, Geher and Kaufman (2007) suggested the following domains: (a) *cross-sex mind reading*, or awareness of a potential mate's interest (or lack thereof); (b) *mating-relevant self-deception*, general confidence in one's value as a mate, whether reasonable or baseless; (c) *mating-relevant other-deception*, the ability to manipulate potential mates; (d) and *cognitive courtship display*, including those cognitive behaviors involved in attracting a mate. Two additional sex-specific parameters have been theorized, both based on the findings of Haselton and Buss (2000). Males are thought to benefit from assuming sexual interest on the part of potential partners more often than not (*sexual over-estimation*), and it is believed to be advantageous to females to test the dedication of mates (*commitment skepticism*), as they bear greater costs in the case of abandonment.

While this notion of Mating Intelligence has garnered recent attention (e.g., Buss, 2008), the construct is clearly in its infancy and empirical findings based on a validated metric are needed. While a few recent studies have documented the utility of the concept of Mating Intelligence in helping shed light on the nature of human mating behaviors (e.g., Geher, 2009; Greengross & Miller, 2008), work on the development of a valid metric of this construct as an individual-differences variable has yet to be fully developed.

Geher and Kaufman (2007) published two self-report surveys (one for each sex) intended to reflect the various aspects of Mating Intelligence. These surveys (described in more detail in the Method section) include True/False questions about such features as effective cross-sex mind-reading, effective mating-relevant deception, and effective use of behavioral fitness displays in courtship. No data was collected in association with this publication. Using a modified form of these surveys, the two studies presented here investigate whether one's self-perceived strength on the various skills included in the proposed Mating Intelligence construct account for any of the observed variance in sexual behavior among male and female college students. The first study intends to do so through basic proxies of reproductive success, including age of onset of sexual activity and total number of sexual intercourse partners.

The second study explores variation in hook-up behavior—broadly defined as uncommitted sexual encounters between consenting parties—in relation to this construct. A hook-up can range in intensity from simple kissing to heavy petting to intercourse. This contemporary example of casual sexual behavior has become common on college campuses (Grello, Welsh, & Harper, 2006; Paul, McManus, & Hayes, 2000), and there are considerable individual differences in terms of engagement in, and attitudes toward, hook-ups (England, Shafer, & Fogarty, 2007; Eshbaugh & Gute, 2008; Paul & Hayes, 2002). Although hook-ups are explicitly intended to occur without promise of an ensuing long-term relationship—and are largely reported to occur merely for physical pleasure satiation—about half of both males and females report engaging in such interactions with the underlying motivation to develop a more traditional romantic relationship as well (Garcia & Reiber, 2008). Not only does this imply that hooking up represents a contemporary expression of courting in lieu of potentially longer and finer dating practices (see Bogle, 2007), it also suggests that attracting hook-up partners requires the application of one's Mating Intelligence, even if "mating" is not the conscious goal. As such, hooking up is a behavioral expression intimately tied to other reproductively relevant motivations in the culture of the modern college campus, and is likely governed by similar mechanisms that underlie human mating psychology at large (Garcia & Reiber, 2008).

Strictly speaking, hook-up behavior does not necessarily represent an optimal fitness-enhancing strategy for either sex. It is not reproductively oriented *per se*, but can still result in pregnancy. The lack of explicit commitment and potentially limited familiarity between partners magnifies the costs associated with this and

other risks of sex (i.e., sexually transmitted diseases, psychological sequelae) for both sexes; but it is females who bare the greatest burden with respect to unwanted pregnancy and possible negative emotional reactions following uncommitted sex (Campbell, 2008). Thus, we hypothesize that, while most college-aged individuals of both sexes take part in hook-ups (Bogle, 2007; England et al., 2007; Garcia & Reiber, 2008; Lambert, Kahn, & Apple, 2003; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000), there will be a sexual dimorphism in the relationship between one's self-perceived Mating Intelligence and decisions made in this context. We predict that responses on the survey will be positively associated with hook-ups of all types for males. Being that women are more likely than men to reap benefits by being more selective in mate-choice, we posit that those females who report higher Mating Intelligence will tend to choose hook-up partners who would be more likely to develop into a committed pair-bond.

As Mating Intelligence is believed to be an evolved set of mental capacities, we test the external validity of Geher and Kaufman's (2007) surveys by exploring the extent to which scores on each correlate with those reproductive decisions hypothesized to be evolutionarily adaptive for each sex. In addition, through internal validation we investigate the potential for this tool to be developed and refined into a more sophisticated and comprehensive measure of one's actual Mating Intelligence.

STUDY I

Materials and Methods

Participants

Participants included 58 male and 46 female undergraduate students at Binghamton University, a medium-sized state university in New York. Of these, 51 males and 40 females answered the external validation questions. Participants were recruited through an introductory biology/anthropology course. All subjects were over the age of 18 years old (males: $M = 19.24$, $SD = 1.15$; females: $M = 19.42$, $SD = 1.47$). The University's Institutional Review Board approved this research and each participant gave consent prior to participation in this study. All responses were anonymous.

Survey

Participants were asked to fill out the Geher and Kaufman (2007) survey appropriate to their sex, as well as questions on individual sexual history. The survey was slightly altered from its original form: the original True/False format was replaced with a 5-point Likert scale; subjects were asked if they were heterosexual, homosexual, or bisexual. No subjects reported being homosexual, but three females who described themselves as bisexuals were excluded from

analyses, as bisexuals partake in different sexual decisions than their same-sex peers, and may have different mating psychologies. While each of the original surveys consisted of 24 questions, four of those questions were intended to measure mating success as opposed to any specific component of Mating Intelligence. We exclude these questions in both surveys from analysis as they were replaced by more direct questions about sexual history. The items comprising the other scales are visible in Tables 1 and 2. The questions on individual sexual history included: a) Are you a virgin?; b) At what age did you first have heterosexual intercourse?; and c) How many heterosexual sex partners have you had? These questions were asked in a small classroom setting, when individuals attended discussion sections, thus providing a more private setting with space in between individuals.

Variables

Self-reported Mating Intelligence was calculated for each subscale and the scale as a whole, and arithmetically standardized to a 0-100 measure. The following variables were used for external validation: *virginity* (non-virgin = 0, virgin = 1), *age at loss of virginity*, *number of sex partners*, and *sex partners per year*. *Sex partners per year* was calculated by dividing *number of sex partners* by the difference between *age at loss of virginity* and the individual's current age, rounded to the nearest quarter year. This variable measured the rate of sexual activity following age of first sex, and thus provides interesting variation aside from total number of sexual partners. We log-transformed *number of sex partners* and *sex partners per year* before analysis, owing to non-normal distributions.

Validation

All analyses were done separately for each sex. The external validation was done primarily by exploring the relationship between the survey scores and the external variables. The internal validation involved calculating Cronbach's alpha scores for each subscale and also for the total scale. Cronbach's-if-removed were determined for all questions in subscales, but not for the entire scale. An exploratory factor analysis was not performed owing to an insufficient sample size (see Tabachnick & Fidell, 2007).

RESULTS

The overall reliability for both males and females was within an acceptable range, although the reliability of the female scale was lower than that for males (males: $\alpha = .774$; females: $\alpha = .570$). In males, the only subscale with a strong reliability was *cross-sex mind reading* ($\alpha = .807$), while *sexual over-estimation* was mildly reliable ($\alpha = .629$) (see Table 1). In females, *cross-sex mind reading* is again the strongest subscale, although the effect is more mild ($\alpha = .639$). The rest of the subscales for each sex feature low alphas (see Table 2).

Table 1. Questions, Cronbach's Alphas, and Cronbach's-if-Removed for All Scales in Male Survey.
 Boldated items are reverse-coded.

	Study 1 (Likert)	Study 2 (T/F)
TOTAL SURVEY	$\alpha = .774$	$\alpha = .898$
Cross-Sex Mind Reading	$\alpha = .807$	$\alpha = .758$
"I'm pretty good at knowing if someone is attracted to me."	.718	.598
"I'm good at picking up signals of interest from potential mates."	.750	.672
"Honestly, I don't understand potential mates at all!"	.776	.702
"I am usually wrong about who is interested in me romantically."	.782	.811
Self-Deception	$\alpha = .145$	$\alpha = .572$
"I'm definitely not the best at taking care of kids."	.296	.658
"I'm definitely near the top of the status totem pole in my social circle."	-.058	.319
"I doubt that I'll ever be a huge financial success."	-.125	.380
"If a potential mate doesn't seem interested in me, I figure he or she doesn't know what he or she's missing."	.271	.560

Other-Deception		
"I'm good at saying the right things to people I flirt with."	$\alpha = .127$	$\alpha = .553$
"If I wanted to, I could convince a potential mate that I'm really a prince from some little-known European country."	.050	.412
"When I lie to potential mates, I always get caught!"	-.202	.471
"It's hard for me to get potential mates to see my virtues."	.370	.509
	.007	.519
Courtship Display		
"I have a difficult time expressing complex ideas to others."	$\alpha = .051$	$\alpha = .587$
"People tell me that I have a great sense of humor."	-.013	.377
"At parties I tend to tell stories that catch the attention of potential mates."	.181	.536
"I'm not very talented in the arts."	.027	.574
	-.096	.561
Sexual Over-Estimation		
"I think most potential mates just like me as a friend."	$\alpha = .629$	$\alpha = .683$
"People tend to flirt with me pretty regularly."	.512	.623
"Potential mates definitely find me attractive."	.525	.624
"When a potential mate smiles at me, I assume he or she is just being friendly."	.576	.566
	.625	.650

Table 2. Questions, Cronbach's Alphas, and Cronbach's-if-Removed for All Scales in Female Survey.
 Boldfated items are reverse-coded.

	Study 1 (Likert)	Study 2 (T/F)
TOTAL SURVEY	$\alpha = .570$	$\alpha = .690$
Cross-Sex Mind Reading	$\alpha = .639$	$\alpha = .617$
"I can tell when someone is being genuine and sincere in his or here affections toward me."	.638	.569
"Honestly, I don't think I understand potential mates at all!"	.619	.580
"I hardly ever know when someone likes me romantically."	.480	.574
"I am usually right on the money about a potential mate's intentions toward me."	.523	.448
Self-Deception	$\alpha = .216$	$\alpha = .277$
"I look younger than most women my age."	.278	.368
"When a potential mate doesn't seem interested in me, I take it personally and assume something is wrong with me."	.169	.152
"If a potential mate doesn't want to date me, I figure he or she doesn't know what he or she's missing."	.021	.250
"I really don't have a great body compared with other women I know."	.199	.104

Other-Deception		$\alpha = .309$	$\alpha = .353$
	"I doubt I could ever pull off cheating."	.159	.188
	"I have a sense of style and wear clothes that make me look sexy."	.208	.349
	"With me, a potential mate gets what he or she sees—no pretenses here."	.451	.285
	"If I wanted to make my current partner jealous, I could easily get the attention of other people."	.092	.316
Courtship Display		$\alpha = .344$	$\alpha = .357$
	"Mates don't tend to be interested in my mind."	.314	.451
	"I'm definitely more creative than most people."	-.057	.167
	"I laugh a lot at jokes told by potential mates."	.423	.233
	"I am not very artistic."	.335	.250
Commitment Skepticism		$\alpha = .173$	$\alpha = .613$
	"I believe that most people are actually more interested in long-term relationships than they're given credit for."	.109	.489
	"Most potential mates who are nice to me are just trying to get into my pants."	.083	.508
	"When it comes down to it, I think most partners want to get married and have children."	.102	.532
	"If I have sex with someone too soon, I know he or she will leave me."	.231	.643

All of the subscales were positively correlated in males (see Table 3), with no bivariate correlation sharing less than 8% of the variance. On the other hand, although certain trends can be seen in Table 4, most pairs of subscales in the female survey were not significantly inter-correlated. *Cross-sex mind reading* was positively correlated with *mating-relevant self-deception* ($r = .234$; $p < .05$) and *other-deception* ($r = .310$, $p < .05$). *Mating-relevant other-deception* was also positively associated with *commitment skepticism* ($r = .388$, $p < .01$). Given the inconsistent nature of the internal reliability coefficients, subsequent analyses were conducted exclusively using the total scores on the Mating Intelligence scale.

Self-reported Mating Intelligence was associated with sexual behavior in each sex, as can be seen in Table 5. In males, these scores are positively correlated with *number of sex partners*, predicting 14% of the variance ($r = .373$, $p < .05$). Further supporting a link between self-perceived Mating Intelligence and promiscuity,

Table 3. Correlation Matrix for Survey Subscales: Males

	1	2	3	4	5
1. Mind Reading	—	.376**	.397**	.449**	.506**
2. Self-Deception	.442**	—	.382**	.469**	.424**
3. Mate-Deception	.328**	.594**	—	.436**	.424**
4. Courtship Display	.363**	.524**	.467**	—	.437**
5. Sexual Over-estimation	.287*	.427**	.404**	.501**	—

Note: Correlations for Study 1 are represented below the diagonal (—), Study 2 is represented above.

N for Study 1 = 50 males; *N* for Study 2 = 60 males.

Table 4. Correlation Matrix for Survey Subscales: Females

	1	2	3	4	5
1. Mind Reading	—	.379**	.054	.190	-.255*
2. Self-Deception	.234*	—	.127	.227	-.121
3. Mate-Deception	.310*	.218	—	.415**	.179
4. Courtship Display	.220	.024	.148	—	.023
5. Commitment Skepticism	.007	-.121	.388**	.152	—

Note: Correlations for Study 1 are represented below the diagonal (—), Study 2 is represented above.

N for Study 1 = 41 females; *N* for Study 2 = 72 females.

Table 5. Correlation Matrix for Continuous Variables

	1	2	3	4
1. MI Score	—	-.448*	.355	.140
2. Age First Sex	.055	—	-.403**	.195
3. # Sex Partners	.373*	-.400**	—	.640**
4. Partners/Year	.538*	.195	.726**	—

Note: Males are represented below the diagonal (—), females are represented above.
* $p < .05$, ** $p < .01$.

the scores predicted 29% of the variance in *sex partners per year* ($r = .538$, $p < .05$). No relationship was observed between Mating Intelligence scores in males and *age at loss of virginity* ($r = .055$, $p = ns$). In females, scores on the survey were associated with an earlier loss of virginity ($r = -.403$, $p < .01$). A multiple regression found that this relationship was not an artifact of sexual experience, as it remained ($B = -.416$, $p < .05$), regardless of *years of sexual activity* ($B = .073$, $p = ns$). Reported Mating Intelligence was unrelated to indices of promiscuity in females.

Being that virginity is a dichotomous variable, we explored its relationship with reported Mating Intelligence by using a logistic regression in place of measuring the correlation. In males, non-virgins reported higher Mating Intelligence ($B = -.128$, $SE = .043$, $Wald = 9.021$, $p < .01$), with a 1-point increase on the scale predicting an individual to be 13% less likely to be a virgin. This effect predicts 22-33% of the variance (Cox & Snell $R^2 = .221$; Nagelkerke $R^2 = .333$). The actual model was also found significant for females ($\chi^2[1] = 4.675$, $p < .05$), but the parameter for Mating Intelligence only approached traditional levels of significance ($B = -.113$, $SE = .058$, $Wald = 3.729$, $p < .10$).

STUDY II

Materials and Methods

Participants

Participants included 60 male and 72 female undergraduate students at Binghamton University. All subjects were over the age of 18 years old (males: $M = 19.44$, $SD = 1.43$; females: $M = 19.64$, $SD = 1.35$). None of the participants from Study I participated in Study II. Participants were recruited through the Psychology Department's Human Subject Pool. Again, the University's Institutional Review Board approved this research and each participant gave consent prior to participation in this study. All responses were anonymous.

Survey

A web-based survey was implemented using SurveyMonkey (www.surveymonkey.com). Access to the survey was limited to participants recruited via the subject pool. Each participant completed the Geher and Kaufman (2007) Mating Intelligence survey for the appropriate sex. The version used here utilized the original True/False format as opposed to the Likert-scale format used in Study 1. Although not true for most psychometric research, there are rare occasions on which dichotomous response may lead to more reliable responding than a Likert scale. Using a dichotomous (as opposed to scaled) index may be particularly useful in facilitating responses that lack ambiguity, thereby forcing participants to take a stand regarding their attitudes and behavior (see Snyder & Gangestad, 1986, for a summary of this reasoning applied to the Self-Monitoring Scale). As scale reliabilities were low using a Likert-scale format, we elected to use a dichotomous format in this study in order to more fully understand these psychometric properties of the measure.

The survey also included a variety of questions about hook-up encounters, including each participant's history of hook-up behavior. Questions distinguished between three types of hook-ups: Type I (with strangers), Type II (with acquaintances), and Type III (with friends). This was done to allow for an examination of the qualitatively different types of relationships that may result in sexual encounters and how such decisions relate to Mating Intelligence. Hook-up experiences were also coded dichotomously (0 = never had, 1 = have had).

Validation

External validation again explored the relationships between the survey scores and external variables. Internal validation relied primarily on Cronbach's alphas. Although the *N*'s for the male and female sample are larger here, they are still not adequate for a confirmatory factor analysis (see Tabachnick & Fidell, 2007).

RESULTS

Psychometric Analyses

The dichotomous True/False format produced higher alphas across both sexes (males: $\alpha = .898$; females: $\alpha = .690$). The alpha of nearly every subscale increased as well (see Tables 1 and 2). While the True/False measurement paradigm seemed to have a generally positive effect on internal reliability, some psychometric issues that emerged in Study I were still present. Again, the subscales of the male survey are consistently inter-correlated (see Table 3). Apart from the emergence of one negative correlation in the female survey (between *cross-sex mind-reading* and *commitment skepticism*; $r = -.255, p < .05$), such inter-correlation was limited, as was found in Study I. In subsequent analyses, we exclusively utilized responses to the complete scale.

Mating Intelligence as a Predictor of Hook-Up Behavior in Males

A majority of males (73%) reported having engaged in a hook-up, consistent with previous studies (England et al., 2007; Garcia & Reiber, 2009; Paul & Hayes, 2002; Paul et al., 2000). The *t*-tests presented in Table 6 show that males who reported having had Type I hook-ups (with strangers) reported significantly higher Mating Intelligence in contrast with those who did not report such experiences; the same effect was found for Type III hook-ups (with friends). Interestingly, males who reported engaging in Type II hook-ups (with acquaintances) did not differ significantly on the Mating Intelligence scale from males who did not report having had such interactions. As predicted, males who reported never having engaged in a hook-up of any type reported much lower Mating Intelligence, this particular difference representing the largest effect size (Cohen's $d = .98, p < .05$).

Mating Intelligence as a Predictor of Hook-Up Behavior in Females

An even larger proportion of the female participants (85%) reported having engaged in some level of hook-up behavior compared with males (73%). When the same analysis as above was done for females, high reports of Mating Intelligence corresponded to having had Type II hook-ups (with acquaintances). Having engaged in Type I (with strangers) or Type III (with friends), though, was not related to Mating Intelligence in females. Finally, having engaged in a hook-up at all was not related to Mating Intelligence in females (see Table 7).

Relationships among Hook-Up Types

Phi coefficients were computed for each sex to see whether engaging in one type of hook-up was predictive of engaging in other types of hook-ups (see Table 8). We found that inter-correlations among these types of hook-up experiences were stronger for men, as having engaged in each type of hook-up experience was positively related to having engaged in each of the other kinds of hook-ups. For women, however, there was only a significant positive relationship between having engaged in Type I (with strangers) and Type II (with acquaintances) hook-ups.

GENERAL DISCUSSION

The aim of the current studies was to assess the relationship between a self-report scale of Mating Intelligence and sexual behavior among male and female college students. Study I examined the degree to which these self-perceptions predicted short-term mating outcomes, such as onset of sexual behavior and

Table 6. Descriptive Statistics and *t*-Test Results for Mating Intelligence (MI) Scores as a Function of Whether Participants Had Engaged in Each Type of Hook-Up Experience: Males (Means with Standard Deviations in Parentheses).

	Type I Hook-Up (with a stranger)		Type II Hook-Up (With an acquaintance)		Type III Hook-Up (With a friend)		Ever Hooked Up	
	YES ^a (N = 33)	NO ^b (N = 27)	YES ^a (N = 20)	NO ^b (N = 40)	YES ^a (N = 32)	NO ^b (N = 28)	YES ^a (N = 44)	NO ^b (N = 16)
MI	13.54* (4.30)	9.48 (5.22)	13.20 (4.47)	10.98 (5.31)	13.50* (4.14)	9.68 (5.43)	12.95* (4.69)	8.31 (4.80)
	Cohen's <i>d</i> = .85		Cohen's <i>d</i> = .46		Cohen's <i>d</i> = .80		Cohen's <i>d</i> = .98	

**t*-test: *p* < .05

^a"YES" refers to participants who reported having had this kind of hook-up experience.

^b"NO" refers to participants who reported *not* having had this kind of hook-up experience.

Table 7. Descriptive Statistics and *t*-Test Results for Mating Intelligence (MI) Scores as a Function of Whether Participants Had Engaged in Each Type of Hook-Up Experience: Females (Means with Standard Deviations in Parentheses).

	Type I Hook-Up (with a stranger)		Type II Hook-Up (With an acquaintance)		Type III Hook-Up (With a friend)		Ever Hooked Up	
	YES ^a (N = 38)	NO ^b (N = 34)	YES ^a (N = 24)	NO ^b (N = 48)	YES ^a (N = 48)	NO ^b (N = 24)	YES ^a (N = 61)	NO ^b (N = 11)
MI	13.34 (4.30)	11.59 (3.64)	14.25* (3.27)	11.65 (3.80)	12.79 (3.79)	11.96 (3.88)	12.61 (3.87)	12.00 (3.63)
	Cohen's <i>d</i> = .47		Cohen's <i>d</i> = .74		Cohen's <i>d</i> = .22		Cohen's <i>d</i> = .16	

**t*-test: *p* < .05

^a-"YES" refers to participants who reported having had this kind of hook-up experience.

^b-"NO" refers to participants who reported not having had this kind of hook-up experience.

Table 8. Phi Coefficients Addressing Relationship between Having Engaged in Each Kind of Hook-Up

Hook-Up Type	I (Stranger)	II (Acquaintance)	III (Friend)
I (Stranger)	—	.551*	-.020
II (Acquaintance)	.426*	—	.188
III (Friend)	.295*	.307*	—

* $p < .05$; Male data are below the diagonal (—), females are represented above.

number of sexual partners. Study II investigated the degree to which Mating Intelligence predicted hook-up behavior in college students. We will discuss the findings from each study in turn.

In Study I, females who scored high on the Mating Intelligence scale were more likely to have an early onset of sexual activity, while high male scores were associated with an increase in total number of sexual partners. Interestingly, neither of these correlations held for the opposite sex. While these results act to externally validate the scales, they further suggest that there may be evolved sex differences in the development of Mating Intelligence skills.

Given the role of child-bearing, the long-term fitness of a female may be harmed more than helped if an offspring is sired by an unreliable mate (Thornhill & Gangestad, 2008), favoring a selective attitude when mating. At the same time, a female's reproductive potential is limited due to lengthy gestation and inter-birth lactation periods—not to mention the onset of menopause—suggesting that an earlier onset in sexual activity can, in some contexts, also be adaptive for a female. Given the cooperative nature of child-rearing (Hrdy, 2009), this would only stand true if she is capable of identifying, attracting, and maintaining a dedicated mate. One might then expect females who are more confident in their mating skills to engage in sexual behavior at an earlier age, while others would delay it.

Our results reflect this as females that scored higher on the scale had an earlier onset of sexual activity on average. Interestingly, these scores were not associated with a longer duration of sexual experience, implying an association between confidence in these skills and reproductive timing, and leading us to posit that they may be learned by females through socialization at an early age. It is important to address this in terms of the modern cultural context, in which the cost associated with early-teenage pregnancy makes risky sexual behavior at this age seem wholly non-adaptive. Further, it is historically recent that the average age of menarche, and as such the ability for a sexually active female to conceive a child, has dropped below the later part of teenage years (Garcia & Reiber, 2008). Costs of early-teenage pregnancy are a relatively novel environmental factor, which have not had enough time to exert selective influence on the psychological

mechanisms governing reproduction. Thus, a pubescent girl who is confident in her ability to maintain her relationship will still partake in such behavior, despite the extant risk.

In contrast with females, evidence suggests that men raise their relative reproductive success mainly through increases in their number of sexual partners (Betzig, 1986; Dawkins, 1986). In agreement with this, self-reports of Mating Intelligence in males were unrelated to the onset of sexual activity, but were predictive of virginity and promiscuity. While mating success might involve *a priori* skill development in females, it could be that males grow into their mating roles through experience. It is well-documented cross-culturally that females are attracted to social status in males (Shackelford, Schmitt, & Buss, 2005), and such status is influenced by age and resource acquisition. In fact, competitive encounters elicit hormonal changes (i.e., increases in testosterone) that are influenced by outcome (e.g., victory) in various species (Archer, 1988), which, in turn, increases the sorts of dominant behaviors that signal status. It may be that the mere onset of sexual activity and success in the mating arena stimulate a male to be confident in the mating domain, a feature that is, in itself, attractive to females.

Study I focused on basic descriptions of sexual behavior that do not explicitly reference the particulars of the life led by the college students who acted as participants. To the extent that Mating Intelligence importantly characterizes human psychology, the abilities that comprise Mating Intelligence should also be seen to operate within a culture's specific customs in regards to forming intimate relationships. Working on this assumption, Study II explored the role of one's perceived Mating Intelligence in a domain that is highly relevant to relationship development in contemporary young adults: hook-up experiences.

In Study II, distinction of hook-ups into Types I (with strangers), II (with acquaintances), and III (with friends) proved useful, particularly with respect to the sex-differentiated nature of optimal mating strategies (see Buss & Schmitt, 1993). One might mistakenly assume that high Mating Intelligence in females should be associated with total abstention from hook-up behavior, as uncommitted sexual behavior can not possibly be adaptive. However, it is important to acknowledge that this *is* the mating arena for college students in modern day America (Bogle, 2007), and that reproductive adaptations are thus channeled toward it. Females are believed to use hook-ups as a method for screening potential long-term mates, and those high in Mating Intelligence could be expected to hook-up with individuals who are better candidates for a relationship. This would imply fewer hook-ups with unfamiliar strangers, as these may be most likely to lead to desertion or other unwanted consequences (e.g., disease), and fewer hookups with close friends, since such friendships were not rooted in developing a sexual bond (see Bleske-Rechek & Buss, 2001). In fact, among females, the most promising choice for a hook-up seems to be an

acquaintance, as there is some pre-existing basis for social connection and attraction, and at least a small opportunity to judge his trustworthiness. Our results fit these predictions well, as those females who perceived themselves as strong in Mating Intelligence were more likely than others to engage in Type II hook-ups (with acquaintances), but not Type I (with strangers) or Type III (with friends) hook-ups. Interestingly, there was no meaningful difference in self-reports of Mating Intelligence between those who engaged in any sort of hook-up behavior (regardless of type) and those who had not, which is to be expected due to the differences in adaptive outcomes associated with each distinct category.

On the other hand, with increased sexual activity being generally adaptive for males, we hypothesized a generalized association between Mating Intelligence and all forms of hook-up behavior. This was borne out as those males who reported having higher Mating Intelligence were more likely to have had hook-ups with strangers (Type I) and with friends (Type III), as well as any sort of hook-up in general. It should be noted that the only type of hook-up that was not directly associated with higher reports of Mating Intelligence in males, Type II hook-ups (with acquaintances), did approach significance ($p < .10$) and had a moderate effect size (Cohen's $d = .46$). It remains open to further investigation the extent to which Mating Intelligence in males is related to hook-up behavior among acquaintances.

Future Directions for MI Research

The two different versions of the Mating Intelligence survey (Geher & Kaufman, 2007) used here demonstrated reasonable full-scale reliability. Interestingly, the True/False version used in Study II had considerably better reliability than the Likert-scale version used in Study I. There are two major psychometric liabilities of both these studies that should be addressed together in future research. First, neither study had an N that was sufficient for a factor analysis. Secondly, the hypothesized internal structure of the instrument appears to be inaccurate, meaning proceeding work will be doing exploratory, not confirmatory, factor analyses. Most surprisingly, certain subscales have exceptionally low reliabilities, and yet, at least in the male survey, the subscales themselves still correlate strongly at times. This unlikely outcome stems from the intercorrelation of questions from different subscales that do not also correlate with the other members of their own subscales (not presented formally for the sake of brevity). While the hypothesized scales make theoretical sense, the skills they describe may operate in different groupings *in vivo*. This should be one of the main foci of future research on Mating Intelligence.

As this research reports findings from a self-report survey, it is possible that people's answers simply reflect their preferred view of themselves, not their actual abilities in the mating domain. However, the findings from Study II

suggest that such a bias may be unlikely, consistent with Paul and colleagues (2000) who report that both females and males who had ever hooked up had lower self-esteem than individuals who had not. However, self-report scales of mating-relevant abilities can run into problems, and a potentially useful research direction would be to create ability-based measures of Mating Intelligence much as ability-based measures of emotional intelligence were created (see Geher, 2004). Such ability-based tests might be better in identifying people who demonstrate superior cognitive skills in the mating domain. Although there remain questions regarding the validity of the survey's methodology, the findings here support the content, as those who have adaptive mating outcomes chose to answer the survey in accordance with its hypothesized rules of courtship.

Finally, the studies here are limited in two ways: they focus on the predictive utility of Mating Intelligence in the relatively early stages of a sexual relationship and at a very specific point in the life cycle. Further work could clearly benefit from examining how well responses to Mating Intelligence scales predict features of relatively advanced intimate relationships and long-term reproductive fitness (dating behavior, marriage, number of children, etc.). Work in these directions could eventually lead to a more comprehensive construct that could be applicable to the further study of individual differences in human mating behavior. Nevertheless, the college-aged populations used in these studies provide the added advantage of being near or at the height of their mating activity, amplifying the variation in sexual behavior and sexual experience, providing a good initial view into the relationship between Mating Intelligence and individual differences in sexual behavior.

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