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A Multidimensional Model of Sociosexuality

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A MULTIDIMENSIONAL MODEL OF SOCIOSEXUALITY

A Thesis
Presented to
The Faculty of the Department of Psychology
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of

Master of Arts

by
Jenée James
2004
APPROVAL SHEET

This thesis is submitted in partial fulfillment of the requirements for
the degree of

Master of Arts

Jenee James

Approved by the Committee, June 2004

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ABSTRACT

Sociosexuality refers to individual differences in willingness to engage in uncommitted sexual relationships. The Sociosexual Orientation Inventory (SOI) has become the leading measure of individual differences in mating strategy. Based on recent theoretical and empirical developments, I argue that the SOI is a potentially misleading measure of both between and within-sex variation in mating strategies, and propose that a multidimensional measure of sociosexuality is needed in order to more accurately assess individual differences in mating psychology. I then present four studies that were designed to develop and validate a multidimensional measure of sociosexuality. Study 1 was designed to determine the dimensions underlying a revised version of the SOI, which included items measuring both willingness to engage in long-term committed relationships and willingness to engage in short-term sexual relationships. The purpose of Study 2 was to replicate the factor structure that emerged in Study 1, and to develop valid and reliable measures of each dimension underlying sociosexuality. The goal of Studies 3 and 4 was to investigate how previous empirical relationships between sociosexuality and other variables are potentially flawed or misleading, and to examine how a multidimensional measure of sociosexuality clarifies and extends previous research. Results and implications for future research are discussed.
A MULTIDIMENSIONAL MODEL OF SOCIOSEXUALITY
Evolutionary theories have provided the most successful and comprehensive framework for understanding human mating psychology. All evolutionary models are based on the premise that human mating is strategic in nature. Specifically, mating is thought to be guided by a distinct set of psychological mechanisms that evolved because they solved the reproductive problems encountered by our ancestors. Among the many models proposed within the evolutionary framework, pluralistic models offer the most successful approach for analyzing mating psychology (Schmitt, Shackelford, & Buss, 2001; Schmitt, Shackelford, Duntley, Tooke, & Buss, 2001). Pluralistic models contend that men and women have evolved both short-term and long-term mating strategies (e.g., Buss & Schmitt, 1993; Gangestad & Simpson, 2000). Accordingly, two key areas of research that have emerged involve how the sexes systematically differ in their pursuit of long-term and short-term mating strategies and how individual differences arise within each sex.

This thesis focuses on the measurement of within-sex variation in mating strategies, and focuses particularly on a strategic dimension called sociosexuality (Gangestad & Simpson, 1990; Simpson & Gangestad, 1991a). Sociosexuality refers to individual differences in willingness to engage in sexual relations without closeness or commitment, and its existing measure, the *Sociosexual Orientation Inventory* (SOI), has become the prevailing method for assessing individual differences in mating strategy. Despite its widespread use, the SOI is a potentially misleading measure of both between and within-sex variation in mating strategies. This is due to the fact that the theoretical
models describing individual differences in mating strategy have changed drastically over the last decade, and the SOI has not been restructured according to these changes. As a result, the SOI no longer maps on conceptually to the leading theoretical accounts of within-sex variation in mating strategies.

The first part of this thesis is dedicated to examining how theories of within-sex variation in mating have evolved, and how this evolution has implications for measuring human mating strategies. In the second half of this thesis, I introduce two major modifications that need to be made to the SOI in order for it to serve as an accurate assessment of between-sex and within-sex variation in mating strategy. Ultimately, I argue that sociosexuality is best conceptualized and measured not as a single bipolar dimension, but as a multidimensional construct that taps the temporally distinct mating psychology of males and females. I then report four studies designed to empirically validate this multidimensional model of sociosexuality.

The SOI: A Measure of Sociosexual Variation

The original conceptualization of sociosexuality as a behavioral trait reflecting willingness to engage in uncommitted sexual relations was based upon past research indicating individual variation on a number of related sociosexual variables including number of past sexual partners, number of sexual partners expected in the future, number of one-night stands, and attitudes towards engaging in casual, uncommitted sex. Simpson and Gangestad (1991a) demonstrated in a factor analytic study that these variables define an individual-difference dimension reflecting willingness to engage in uncommitted sexual relations. In a number of subsequent studies, Simpson and Gangestad developed and validated a self-report measure of this dimension. The Sociosexual Orientation Inventory (SOI) combines five components that tap aspects of an individual's previous sexual behavior, their anticipated future sexual behavior, their
current sexual thoughts, and their current attitudes toward engaging in uncommitted sex, and possesses adequate levels of internal reliability.

Individuals who score low on the SOI are said to possess a restricted sociosexual orientation. These individuals require greater closeness and commitment prior to having sex with a romantic partner. Unrestricted individuals, those who score high on the SOI, require less commitment and closeness relative to their restricted counterparts. With the use of both self-report and partner-report data, Simpson and Gangestad (1991a) demonstrated that unrestricted individuals, relative to restricted individuals, tend to engage in sex at an earlier point in their relationships, and tend to be involved in romantic relationships characterized by less love, less commitment, less investment, and less emotional bonding. Furthermore, unrestricted individuals are more likely to engage in sexual affairs outside of existing relationships. These findings were complemented by evidence of discriminant validity indicating that the SOI is relatively orthogonal to measures of sex drive and sexual satisfaction.

Simpson and Gangestad found that sex accounts for a substantial amount of the variability in sociosexuality. This finding is consistent with previous research demonstrating that males tend to possess more permissive attitudes towards casual sex (e.g., Buss & Barnes, 1986; Hendrick, Hendrick, Slapion-Foote, & Foote, 1985), and seek more short-term sexual relationships relative to females (e.g., Eysenk, 1976, Laumman, Gagnon, Michael, & Michaels, 1994; Wiederman, 1997). Nevertheless, the variability that exists within the sexes on sociosexuality greatly exceeds that found between the sexes.

Theoretical Model of Sociosexual Variation

Around the time that they developed the SOI, Gangestad and Simpson (1990) also developed a theoretical model to describe the possible origins of sociosexual
variation. After presenting indirect evidence suggesting that a substantial amount of the variation underlying sociosexuality is heritable variation, Gangestad and Simpson developed an evolutionary theoretical model that could account for these findings. They argued specifically that the genetic variation underlying sociosexuality reflected two alternate mating strategies that were evolved and maintained through frequency-dependent selection, particularly within the female sex. Frequency-dependent selection operates when the fitness values of two or more different genotypes vary according to their relative frequencies within a population, and is one of few ways that selection can maintain heritable genetic variation for adaptive traits.

According to the model, female restricted and unrestricted sociosexual orientations represent two genotypes that promoted reproductive fitness via different behavioral pathways during our evolutionary past. The restricted orientation served to enhance paternal investment in offspring, while the unrestricted orientation served to promote the reproductive abilities of offspring, particularly males. Gangestad and Simpson argued that these alternate mating strategies were stabilized through frequency-dependent selection, as the value of each strategy was likely dependent upon how many restricted and unrestricted females existed in the population. A brief summary of their argument is presented below.

Due to the fundamental asymmetry that exists between the sexes in terms of minimum obligatory parental investment, males and females faced different reproductive constraints throughout evolutionary history. For instance, females are biologically obligated to invest more in reproduction, given internal fertilization and gestation, and throughout evolutionary history were reproductively constrained by the quality of their mates. As a result, women likely evolved to evaluate potential male partners on two distinct dimensions: the extent to which a male is willing and able to invest in the
relationship and any subsequent offspring, and the extent to which a male shows
evidence of possessing good genetic qualities that can be passed on to offspring.
Gangestad and Simpson (1990) argued that although females should have evolved to
desire mates high on both dimensions, it was probable that a female's ability to obtain a
mate high on one dimension precluded her from obtaining mates high on the other
dimension. For instance, probably the best female behavioral strategy for acquiring male
parental investment was to exhibit restricted sociosexual behaviors. This not only
allowed females time to determine a potential mate's ability and willingness to invest, but
it also provided potential male partners with a strong level of certainty that any offspring
resulting from the relationship was likely his own.

If unrestricted females existed in the population, however, restricted females
would have been placed at a competitive disadvantage in terms of obtaining mates high
in genetic quality. This is due to the fact that males possessing good genes probably
encountered more mating opportunities, and were best able to increase their
reproductive success by mating with multiple females. Unrestricted females would have
been at an advantage in reproducing with these high quality males because they would
have required less time and commitment prior to having sex. Moreover, unrestricted
females would have benefited from these matings because good genes would be
passed on to any resulting offspring, enhancing their reproductive capability (particularly
the capabilities of sons, given the greater variance in male reproductive success in our
evolutionary past).

Gangestad and Simpson argued that frequency-dependent selection would have
stabilized a mixture of these two strategies since the value of each strategy would
decrease as its relative frequency in the population increased. For instance, as the
number of unrestricted females in the population increased, the number of sons of high
quality males would increase creating competition. As the competition among sons of unrestricted females increased, the value of the unrestricted strategy would decrease. Conversely, as the number of restricted females increased, the competition between them for investing males would increase, and the strategy would become less valuable.

Although the frequency-dependent model clearly addresses the evolution and maintenance of female sociosexual variation, it does not address the processes underlying male sociosexual variation. In later writings, Simpson and Gangestad (1991b) argued that, although it is plausible for male sociosexual variation to have evolved through frequency-dependent selection, it is more likely that males evolved to mate conditionally. Conditional mating strategies, which allow individuals to adopt strategies based on environmental assessments, may have resulted in the selection of a more optimal strategy for males. Males who were able to acquire multiple mates should have benefited by shifting to an unrestricted sociosexual orientation, whereas males who failed in this endeavor should have benefited by shifting to a restricted sociosexual orientation.

Using the SOI to Test Theoretical Predictions

To test predictions derived from their model of evolutionarily selected alternate mating strategies, Simpson and Gangestad examined the relationship between the SOI and two important variables, romantic partner choice and offspring sex ratio. Simpson and Gangestad (1992) hypothesized that restricted and unrestricted females should seek out different types of romantic partners. According to their model, restricted females should prefer males who are likely to commit exclusively to them and their offspring whereas unrestricted females should prefer males who possess characteristics indicative of high genetic quality, such as physical and sexual attractiveness. Simpson and Gangestad further hypothesized that males who adopt a restricted sociosexual
orientation should prefer partners who demonstrate sexual exclusivity to the relationship. Unrestricted males, however, should prefer females who appear fertile and evidence good genetic quality. To test these predictions, Simpson and Gangestad had participants complete the SOI along with an index measuring the importance of 15 romantic partner attributes. With the use of factor analysis, they identified two romantic partner choice dimensions corresponding to personal/parenting qualities and attractiveness/social visibility. These factors emerged within both sexes, and each factor correlated significantly with scores on the SOI. In line with their predictions, restricted males and females rated attributes pertaining to personal/parenting qualities as more important relative to unrestricted males and females. Conversely, unrestricted males and females rated attributes pertaining to attractiveness and social visibility as more important. In two subsequent studies, Simpson and Gangestad further demonstrated that restricted and unrestricted individuals choose and actually acquire romantic partners who manifest different sets of attributes.

Another prediction made by Gangestad and Simpson (1990), was that restricted and unrestricted females should differ systematically in the sex ratio of their offspring. Over evolutionary history, male and female offspring should have been of differential value to restricted and unrestricted females. Unrestricted females would have benefited from having more sons, whereas restricted females would have benefited from having more daughters because reproductively successful males tend to produce more offspring than reproductively successful females (Clutton-Brock & Iason, 1986). Gangestad and Simpson (1990) tested this prediction indirectly using personality traits, occupational status, and number of pre-marital partners as markers of sociosexual orientation. In three studies they found converging evidence that unrestricted females have more sons relative to restricted females.
Shortcomings of the Frequency-Dependent Model of Sociosexual Variation

Although there is empirical evidence in support of the model presented by Gangestad and Simpson (1990), this evidence is not sufficient to claim that the genetic variation underlying sociosexuality is maintained by frequency-dependent selection. For instance, the evidence that sociosexuality is heritable does not necessitate a frequency-dependent model because heritability of sociosexuality does not imply that there are genes that code for sociosexuality per se. Furthermore, the argument that female restricted and unrestricted variants become more valuable the rarer they become has not been subjected to more formal test. This lack of formal testing, coupled with the fact that frequency-dependent alternative adaptive strategies present a number of disadvantages relative to alternative modes of strategy “choice,” has allowed for the development of alternative models of variation of within-sex mating strategies.

A major shortcoming of any frequency-dependent model of alternative adaptive strategies is that genetic variants maintained by frequency-dependent selection are unresponsive to the conditions of the local environment, leading to behavioral inflexibility that can be costly to an organism. An alternative to frequency-dependent strategies are ecologically contingent conditional strategies. Conditional strategies allow organisms to adopt a specific strategy once they have assessed the conditions of the environment, and will evolve in place of frequency-dependent strategies when environmental cues signaling optimal strategy choice exist (Tooby & Cosmides, 1990).

In their original model of sociosexual variation, Gangestad and Simpson (1990) argued implicitly that female mate choice was not greatly facilitated by environmental assessment, and therefore female strategy choice could not be explained by conditional models. However, in the years since the development of their original model, new research detailing the nature of the psychological mechanisms that underlie human
mating has led to more comprehensive theories of between-sex and within-sex variation in human mating. For instance, in their *Sexual Strategies Theory*, Buss and Schmitt (1993) carefully detail the adaptive problems faced by our ancestors in the distinct domains of short-term and long-term mating, and formally define the psychological mechanisms that could have evolved to solve these unique problems. In addition, new developments in the area of good-genes sexual selection have revealed how the environment could potentially moderate female mate choice, allowing females to adopt the most appropriate strategy given the demands of the current environment. Based on these developments, Gangestad & Simpson (2000) developed a new model of within-sex variation in mating strategies to extend the theory of sexual strategies developed by Buss and Schmitt. In their new model, labeled *Strategic Pluralism Theory*, Gangestad & Simpson argue that both males and females evolved conditional mixed mating strategies that are contingent on the local environment. I will address both Sexual Strategies Theory and Strategic Pluralism Theory more fully in the sections that follow.

**Sexual Strategies Theory**

A central premise of Sexual Strategies Theory (SST; Buss & Schmitt, 1993; Buss, 1998) is that males and females have evolved distinct psychological mechanisms that function to solve the adaptive problems confronted when pursuing short-term and long-term sexual strategies. Buss and Schmitt defined sexual strategies as a combination of the evolved psychological mechanisms that led to increased reproductive success in our evolutionary past and their behavioral manifestations. They argued that qualitatively different adaptive problems need to be solved when pursuing short-term mating strategies as opposed to long-term mating strategies. As a result, the psychological mechanisms underling short-term and long-term mating strategies are functionally distinct. Due to the asymmetry that exists between the sexes in terms of
minimum obligatory parental investment, males are expected to be more oriented toward short-term mating relative to females. Furthermore, males and females are thought to have evolved sex-specific psychological mechanisms designed to solve the unique problems males and females encountered in each temporal context.

The between-sex variation in mating strategies is thought to exist primarily in the context of short-term mating, where males and females have faced drastically different reproductive constraints. For instance, in order to males to have reproductively benefited from short-term mating strategies they needed to solve the problems associated with obtaining sexual access to multiple females. These problems involved identifying sexually accessible and fertile females, and minimizing commitment and investment in any one relationship. Females, on the other hand, were not reproductively constrained by partner number, but by the genetic and material resources they could obtain from their partners. Therefore, they encountered the unique problems of identifying males with good genetic qualities and obtaining mates who are willing to impart immediate resources. Conversely, in the long-term context, males and females are thought to have encountered a number of the same problems. For instance, both males and females needed to solve the problems associated with obtaining mates who would commit to a relationship, provide good parenting skills, and provide good genes. Males encountered the unique problems of paternity certainty and identifying reproductively valuable women, whereas females faced the unique problems of identifying males who were able and willing to invest in their offspring.

To solve the reproductive problems encountered by males and females, Buss and Schmitt argued that each sex evolved adaptations in the form of mate preferences. The adaptive preferences of males and females are expected to shift in ways that facilitate solutions to the problems that must be solved for the successful pursuit of
short-term and long-term strategies. For examples, males find easy sexual access attractive within the context of short-term mating, but find it extremely unattractive when pursuing a long-term mate (Schmitt & Buss, 1996). In order for adaptive preferences to have evolved they must have influenced the actual mating behaviors of males and females. However, a one-to-one correspondence between preferences and behaviors is not expected due to the fact that preferences cannot always be actualized given the opportunities and constraints of the local environment. Buss and Schmitt suggested that contextual variables such as personal mate value and features of the local environment create the variation that exists within the sexes in mating strategies.

Strategic Pluralism Theory

Strategic Pluralism Theory (SPT; Campbell, Simpson & Orina, 1999; Gangestad & Simpson, 2000) expands SST to explain how personal attributes and features of the local environment systematically elicit or promote different sexual strategies. SPT contends that both men and women have evolved conditional mixed mating strategies that are dependent on the circumstances of the environment and their cues. Accordingly, males and females shift between short-term and long-term mating strategies based on the demands of the local environment. The primary difference between SPT and the original frequency-dependent model of sociosexuality is that the relative value of male parental investment and genetic quality is thought to be governed by environmental conditions, and females should have evolved to make trade-offs between these two mate choice dimensions throughout evolutionary history. This conceptual change can be attributed to a deeper understanding of how female mate preferences for genetic fitness could have evolved through good-genes sexual selection.

In order for good-genes selection sexual to have operated in humans, two conditions must have been met during evolutionary history. First, fitness must have been
transmitted genetically across generations. Second, there must have been honest indicators of underlying genetic fitness that could have served as the basis for mate choice (Grafen, 1990; Zahavi, 1995). Recent theoretical and empirical evidence suggests that these conditions were met and it is likely that good-genes sexual selection operated on ancestral humans (see for example, Gangestad & Thornhill, 1999; Kirkpatrick, 1996). For instance, new theoretical developments concerning host-parasite coevolution suggest that parasites imposed a strong selection pressure that contributed to and maintained genetic variation in fitness in humans (Anderson & May, 1982; Hamilton, 1982; Tooby, 1982). Additionally, new empirical evidence demonstrates that an indirect indicator of underlying genetic fitness, that in part reflects parasite resistance, is preferred by females and is related to male mating success (for a review see Moller & Thornhill, 1998; see also Gangestad & Simpson, 1999).

Based on these new developments, SPT maintains that a critical factor determining the value of male genetic fitness is the presence of pathogens in the environment. In pathogen-laden environments, females should have benefited more from mating with men who had good genetic qualities that made them more pathogen-resistant. However, in environments where biparental care was crucial to infant survival, females should have benefited more from mating with males who provided good paternal care. Furthermore, females should have evolved to make trade-offs between parenting qualities and indicators of good genes to the extent that ancestral women were exposed to these two contrasting environments during evolutionary history.

Studies examining mate preferences across a number of different ecological conditions offer support for the claims made by SPT. For instance, Gangestad and Buss (1993) examined the mate preference of individuals in 29 different countries and found that in the regions that contained the most pathogens, males and females placed greater
importance on a prospective mate's attractiveness. Additionally, females in pathogen-prevalent regions rated attributes associated with male parental care as less important than females in less pathogen-laden environments. These findings suggest that females make trade-offs between male parental investment and male genetic quality in ways predicted by SPT.

*Is Sociosexuality Better Measured and Conceptualized as a Multidimensional Model?*

In light of the changes that theoretical models of within-sex variation have undergone, a reexamination of the leading measure of individual differences is warranted. The conceptualization of sociosexuality as an individual-differences dimension reflecting willingness to engage in long-term, committed relationships versus short-term, uncommitted relationships was a nice conceptual fit with the original theoretical model of sociosexual variation presented by Gangestad and Simpson (1990). In this model, restricted and unrestricted sociosexual orientations reflected alternate mating strategies that individuals, particularly females, were genetically predisposed to pursue. However, the original model of sociosexuality has not been subjected to enough empirical tests, and since its development, conditional models of within-sex variation in mating strategies have gained favor over frequency-dependent models. Models of conditional mating strategies are better able to account for the amount of flexibility males and females exhibit in mating behaviors. However, the SOI does not map onto these new models of context-dependent mating strategies.

In the following section, I argue that the SOI must undergo two major modifications in order for it to be a valid measure for human mating strategies. Specifically, I argue that a measure of mating strategies should comprise at least two distinct dimensions. In addition to distinguishing sociosexual attitudes from behaviors (Bailey, Gaulin, Agyei, and Gladue, 1994), I argue that the distinction between long-
term/restricted and short-term/unrestricted sociosexual attitudes is better measured and conceptualized as two separate dimensions rather than a single bipolar dimension.

**Sociosexual Attitudes and Behaviors**

The SOI, as it is currently constructed, is an aggregate of both sociosexual attitudes and sociosexual behaviors. The aggregate of attitudinal and behavioral items is valuable since it allows researchers to measure an individual's willingness to engage in casual, uncommitted sex and not just their attitudes towards uncommitted sex. However, in the years since the development of the SOI, there has been a substantial amount of theoretical and empirical research demonstrating how conditional or context-dependent mating strategies organize and guide reproductive behavior, and this research suggests that it is potentially useful to distinguish sociosexual attitudes from sociosexual behaviors when measuring mating strategies (Bailey et al. 1994; Buss & Schmitt, 1993; Landolt, Lalumiere, & Quinsey, 1995).

Within conditional models of human mating, mating strategies are defined as integrated sets of psychological adaptations and their behavioral manifestations (Buss & Schmitt, 1993; Gangestad & Simpson, 2000). Thus, mating strategies consist of two components; the underlying adaptive psychology and the behavioral manifestations of the psychology that result from interaction with the environment. Variation in mating strategies takes two forms: between-sex variation and within-sex variation. Variation that exists between the sexes can be attributed to the sex-specific mating psychologies that evolved in response to the adaptive problems that were unique to each sex throughout evolutionary history, whereas variation that exists within the sexes is due to differences in the reproductive opportunities and constraints individuals encounter in the local environment. Therefore, when examining within-sex variation a valuable distinction can be made between the two components that comprise mating strategies. By
distinguishing psychological adaptations from their behavioral manifestations, researchers are able to examine the level, psychological or behavioral, that contextual constraints act to create variation in mating strategies (Symons, 1989, Tooby & Cosmides, 1990).

A recent study conducted by Bailey, Gaulin, Agyei, and Gladue (1994) demonstrates this point. Bailey et al. examined how different mating contexts encountered by homosexual and heterosexual men act to constrain their mating behaviors. Based on Symons (1979), Bailey and colleagues predicted homosexual men and heterosexual men would differ in their behavioral expression of short-term mating, but not their preference for short-term mating. Heterosexual males are constrained in the pursuit of short-term mating because they must meet the demands of a more discriminating sex, females. Homosexual males, however, are not subject to female constraints, and therefore are best able to pursue the sex-typical preferred mating strategy. In order to test their hypothesis, Bailey et al. presented participants with an expanded version of the SOI, which included additional attitudinal items gauging interest in uncommitted sex. They then examined participant’s responses to the attitudinal items and behavioral items separately. Analyses confirmed that although there was no significant difference in the attitudes homosexual and heterosexual men held towards uncommitted, casual sex, homosexual males were more likely to engage in uncommitted sexual behaviors.

Although Bailey and colleagues argued along with Symons (1979) that mating strategies are constrained at the behavioral level and not at the psychological level, not all researchers seem to agree with this claim. For instance, Gangestad and Simpson (2000) argue that possessing preferences and desires that cannot be acted upon would not have been beneficial, and that adaptive preferences should instead shift according to
environmental constraints. Presently, there is little empirical research addressing this issue. Nevertheless, it is an important theoretical question, and it highlights the need for an empirical measure that can capture the two components of mating strategies. For this reason, I argue along with Bailey et al. that sociosexual attitudes and sociosexual behaviors should be viewed as distinct constructs that reflect that two components of evolved mating strategies. Sociosexual attitudes may better represent the underlying adaptive psychology, whereas sociosexual behaviors may better represent the behavioral manifestations of the underlying psychology.

Restricted vs. Unrestricted Sociosexual Attitudes

In the previous section, I argued that sociosexual attitudes may serve as a measure of the underlying adaptive psychology that, in part, comprises the sexual strategies of males and females. However, sociosexual attitudes, as currently measured by the SOI, conflate two temporally distinct dimensions of mating psychology. This conflation of temporal context has led to misconceptions regarding between-sex variation in mating strategies. For instance, the SOI depicts males as being primarily interested in short-term mating and females as being primarily interested in long-term mating despite two important theoretical viewpoints that dispute this conceptualization. As previously mentioned, a key premise of SST is that long-term and short-term mating strategies represent two functionally distinct psychological systems. Therefore, these strategies are at least partly independent of one another and it should be possible to measure the activation of each separately. Moreover, males and females, according to SST, differ more in their psychological orientation toward short-term mating than in their orientation toward long-term mating. An empirical test conducted by Buss and Schmitt (1993) illustrates this point quite well. When they asked males and females to rate the
degree to which they were currently seeking a short-term mate, and, independently, the
degree to which they were seeking a long term mate, they found that males and females
did not differ significantly in their stated pursuit of a long-term mate, but differed widely in
their stated pursuit of short-term sexual partners. Based on these theoretical and
empirical findings, it seems reasonable to suggest that a two-dimensional model of
sociosexual attitudes that distinguishes long-term/restricted from short-term/unrestricted
attitudes better conceptualizes the between-sex variation that exists in mating strategies.

An equally important reason for distinguishing restricted and unrestricted
sociosexual attitudes concerns the changes that theoretical models of within-sex
variation have undergone in recent years and the implications that these changes have
for measuring individual difference in sociosexuality. For instance, frequency-dependent
models of within-sex mating variation suggest that individuals are genetically
predisposed to favor either long-term sexual strategies or short-term sexual strategies.
Accordingly, the conceptualization of sociosexuality as a single bipolar dimension
represents this model quite well. However, conditional models of mixed mating
strategies suggest that there is a degree of psychological and behavioral flexibility within
individuals, allowing them to adopt long-term and short-term strategies according to the
opportunities and constraints present in the local environment. If fact, conditional models
such as SST and SPT have argued that the optimal mating strategies for males and
females may well involve the pursuit of one long-term relationship along with short-term
opportunistic mating when the costs are low and the benefits high (Buss, 1998;
Gangestad & Simpson, 2000). Therefore, it seems misleading to measure attitudes
concerning only one temporal dimension of mating and develop generalizations
concerning overall strategy pursuit. A two-dimensional model of sociosexual attitudes is
a better fit to models of conditional mixed mating strategies.
In a previous study, I sought to test the hypothesis that unrestricted and restricted sociosexual attitudes reflect two distinct psychological dimensions (James, 2003). Specifically, I subjected a revised version of the SOI, which included the Interest in Uncommitted Sex scale developed by Bailey and colleagues (1994), to a principal components analysis. The analysis revealed two factors that accounted for over 50% of the variance. These factors conceptually represented interest in uncommitted sex and interest in monogamous relationships. I created two scales from the items that loaded highest on each factor in order to examine the relationship between the two factors. Correlational analyses revealed that the two scales were moderately correlated with one another ($r = -0.58$, $p < .01$). These findings offer tentative support for a two-dimensional model of sociosexuality.

**Current Research Objectives**

The purpose of the current research is to further develop and validate a multidimensional measure of sociosexuality. To this end, I have revised the SOI to include items measuring willingness to engage in long-term, committed relationships as opposed to interest in monogamous relationships. This conceptual change was made in order to more accurately assess the long-term mating psychology of males and females as described by current theories of between-sex and within-sex variation in mating strategies. Furthermore, I have developed a few new short-term/unrestricted attitudinal items in order to better capture female short-term mating psychology. The SOI and similar measures such as the Interest in Uncommitted Sex scale contain unrestricted attitudinal items that primarily assess an individual's desire to engage in casual, indiscriminate mating with multiple partners. Although these items accurately reflect the short-term mating psychology of males, there are good theoretical reasons to think that female short-term mating psychology is not measured by these items. Female short-term
sexual strategies are not indiscriminate strategies and did not evolve to solve the problem of maximizing partner number. Instead, the sexual strategies of females reflect how they exchange two specific mate choice dimensions; genetic quality and parental investment. As discussed previously, females are expected to prefer males evidencing good genes in the short-term mating context.

Studies 1 and 2 are designed to examine the major dimensions underlying the items from the original SOI and my newly constructed restricted and unrestricted sociosexual attitudinal items. I hypothesize that two global dimensions underlie sociosexual attitudes that reflect the distinct dimensions of long-term and short-term mating psychology. Assuming that this hypothesis is supported, it then follows that the previous literature demonstrating empirical relationships between sociosexuality and other variables may be flawed or misleading. Therefore, Studies 3 and 4 are designed to reexamine the relationships between sociosexuality and other variables that have been previously correlated with the SOI. The primary goal of these studies is to demonstrate how a multidimensional model may extend or clarify previous findings.

A multidimensional measure of sociosexuality could relate to other variables of interest in several ways. It is possible that in some cases the restricted and unrestricted dimensions may correlate with other variables in opposite directions, in which case the results produced using a multidimensional measure may not differ drastically from a measure that treats the two dimensions as opposites of a single bipolar continuum, per the original SOI. However, in other cases, one dimension may be correlated with a variable whereas the other dimension is uncorrelated; in such cases the previously found correlations may drastically underestimate the relationship between sociosexuality and these variables. It is also possible, though perhaps not likely, that there exist variables that correlate positively with both the restricted and unrestricted dimensions of
sociosexuality. In instance such as these, combining the distinct attitudinal dimensions into a bipolar scale would result in near-zero correlations. These issues will be addressed specifically in Study 3 and Study 4.
STUDY 1

In a previous factor analytic study using an adapted version of the SOI, I obtained a three factor structure that represented interest in uncommitted sex, interest in monogamous relationships, and previous sexual behaviors. The goal of Study 1 was to replicate this factor structure using items that measure restricted attitudes or willingness to engage in long-term committed relationships rather than interest in monogamy, and examine the relationships between the underlying factors.

Method

Participants

Two hundred (101 males and 99 females) undergraduate students at the College of William & Mary completed a questionnaire packet in exchange for research credit in an introductory psychology class. Participants were between the ages of 17-26 (Md\(\text{n} = 19\)).

Procedure

Participants reported to a large experimental room in groups of 15 or less. On arriving, participants were told that they would complete an anonymous questionnaire packet focusing on aspects of their personality and sexual history. To ensure anonymity, participants were (a) seated at least one seat apart, and (b) asked not to write any identifying information on the questionnaire packet. Once participants completed the questionnaire packet, they were thanked and debriefed.

In addition to reporting their sex, age, and current dating status, participants responded to an adapted version of the SOI (Appendix A).
Measures

*Sociosexual Orientation Inventory.* The SOI (Simpson & Gangestad, 1991a) consists of eight items. Three items assess past sexual behavior: (a) number of sex partners in lifetime (b) number of sex partners in the past year (with sex being limited to sexual intercourse) and (c) number of times they have engaged in sexual intercourse with someone on only one occasion. One item assesses future sexual behavior: number of partners anticipated in the next five years. One item inquires about sexual fantasy: how often they fantasize about having sex with someone other than their current (or most recent) romantic partner. Three items, each answered on 7-point Likert-type scales, ask about participant's attitudes toward engaging in casual sex.

*Unrestricted Attitudinal Items.* A revised version of the *Interest in Uncommitted Sex Scale* (Bailey, Gaulin, Agyei, & Gladue, 1994) was used to assess unrestricted attitudes. I retained five items from the original scale that best measured interest in casual, uncommitted sex. In addition, three new items were added that were designed to tap female short-term mating psychology. As previously discussed, females are unlikely to relax their mate preference standards in the context of short-term mating, particularly in the domain of physical attractiveness (Regan, 1998). Accordingly, I developed the following three items, which emphasize the quality of the potential short-term sexual partner and will allow for more variation among females for the unrestricted attitudinal component:

1. I could enjoy sex with someone that I find highly desirable even if that person doesn’t have long-term potential.
2. I can imagine myself enjoying a brief sexual encounter with someone I find very attractive.
3. I would never consider having a brief sexual relationship with someone.
Restricted Attitudinal Items. The following items were developed in order to assess attitudes towards long-term, committed relationships:

1. Committed sexual relationships are not for me.
2. If I met the right person, I would consider having a long-term committed relationship.
3. I would like to have at least one committed sexual relationship during my lifetime.

Behavioral Items. New behavioral items were added to elaborate upon the behavioral items included in the original SOI. For instance, a follow-up question to the SOI behavioral item inquiring about the number of sexual partners in the past year was added in order to assess how many relationships could be exclusively classified as casual, short-term relationships. Rather than assuming that individuals who report more sexual relationships are engaging primarily in short-term mating, it will be possible to tease out those relationships that are unrestricted in nature. Although I expect the number of previous sexual partners to be correlated with the number of short-term sexual partners, I believe that the distinction is important given that most research using the SOI takes place in a college setting where individuals are engaging in a variety of romantic relationships. Moreover, the inclusion of this item should serve to capture any reported relationships that were short-term in nature, but do not qualify as one-night stands as assessed by item two in the original SOI.

Finally, I added two follow-up questions to the original SOI behavioral item inquiring about number of sexual partners anticipated in the next five years. Specifically, I asked how many of these partners did participants foresee themselves having (a) long-term, committed sexual relations and (b) short-term, uncommitted sexual relations.
These items allow for a more thorough examination of the types of relationships an individual intends to pursue in the future.

Results and Discussion

In order to determine the factor structure underlying the multidimensional measure of sociosexuality, all attitudinal and behavioral items were subjected to principal components analysis. Because several of these items were moderately correlated with sex, I conducted separate factor analyses within the subsamples of males and females. These analyses revealed similar factor structures, thus I combined the male and female subsamples to produce a more stable factor structure based on the full sample of 200 participants. Because several items on the attitudinal indices were substantially correlated with sex, I standardized each item through z-score transformation within the subsamples of males and females before factor analysis (Snyder, Simpson, & Gangestad, 1986). This procedure effectively removed any correlation between the items that could be attributed to sex. Moreover, it controlled for differences in the response formats of the attitudinal and behavioral items.

Based on eigenvalue scree (Cattell, 1966) and factor interpretability, three factors accounting for over 60% of the variance were extracted and rotated using an oblique procedure. Factor loadings are presented in Table 1. Twelve items loaded highly (.35 or greater) on the first factor, which reflects an unrestricted attitudes dimension. Four items loaded highly on the second factor, which reflects previous sexual behaviors. Three items loaded highly on the third factor, which reflects the hypothesized restricted attitudes dimension. This three factor structure confirms my theoretical-based position that unrestricted and restricted attitudes are best conceptualized and measured as distinct dimensions, which in turn should be distinguished from sociosexual behaviors.
Sociosexual attitudinal and behavioral scales were created using items that loaded on one factor only (i.e., no cross-loadings) and yielded scale scores that could be easily interpreted. Accordingly, of the twelve items that loaded on Factor 1, only ten were averaged to create an unrestricted attitudes scale score for each participant (Items 1-10). Although items 11 and 12 loaded highly on Factor 1, they were excluded from the scale because they used a different response format from the other items and/or cross-loaded on two or more factors. Of the four items that loaded highly on the factor corresponding to previous sexual behaviors, only two of these items (items 13-14) were aggregated to create a measure of total previous sexual behavior. Item 15 was excluded from the previous sexual behaviors scale because a separate behavioral scale was developed to assess previous sexual behaviors that were exclusively unrestricted in nature. Specifically, a scale measuring the proportion of total short-term partners out of the total number of sex partners was developed by aggregating the proportion of short-term sexual relationships in one's lifetime and the proportion of short-term sexual relationships in the past year. Finally, a restricted attitudes scale was created by averaging participant's responses to the three items that loaded highest on the restricted attitudes dimension.

Tables 2 and 3 display the descriptive statistics and internal consistencies for each of the sociosexuality measures, including the original SOI. All of the sociosexuality measures demonstrated high internal reliability except for the restricted attitudes scale. In addition to low internal consistency, the restricted attitudes scale lacked discriminatory power as evidenced by the highly negatively skewed, leptokurtic score distribution. For example, both the mean and median scale score were close to the maximum score of 7.00, and there was little variability among the scores ($s = .53$). Further examination of
the score distribution revealed a natural split just below the median with 45.5% of respondents scoring below 6.50 and 54.5% scoring above 6.50. Thus, before conducting any further analyses using the restricted attitudes scale I transformed the variable into a dichotomous variable based on this natural split in the distribution.

Participant's mean scores on the SOI were low compared to previous studies. For instance, the mean scores in the sample used to develop the SOI were 68.51 and 38.90 for males and females, respectively. Our sample means of 42.18 and 23.48 for males and females were low by comparison. This is likely due to the fact that a participant's SOI score is largely determined by their previous sexual behavior, and in the current sample 57.8% of the participants reported that they had not yet engaged in sexual intercourse. This is not especially surprising given that the sample consisted primarily of first-semester freshmen. Due to the sexual inexperience of this sample, the score distributions for the SOI and total previous sexual behaviors were positively skewed for both sexes. Before conducting any further analyses these data were normalized using logarithmic transformations.

Tables 4 and 5 display the correlations between the new sociosexuality variables and the original SOI. There were high positive correlations among the SOI, unrestricted attitudes, and previous sexual behaviors. In line with my predictions concerning the independent activation of short-term and long-term mating psychology, the restricted attitudes scale correlated only slightly with the unrestricted attitudes scale, and is unrelated to the SOI and measures of sociosexual behavior. The original SOI appears to capture short-term rather than long-term mating psychology. However, these findings are tentative given the low reliability of the restricted attitudes scale. The strength of the relationship between the restricted attitudes scale and the other variables will increase with a more reliable measure of restricted attitudes.
STUDY 2

In order to further test and validate a multidimensional model of sociosexuality, reliable and valid measures tapping both willingness to engage in casual, uncommitted sexual relationships and willingness to engage in long-term, committed sexual relationships are required. Therefore, Study 2 was dedicated to replicating the factor structure obtained in Study 1 while testing a revised version of the restricted attitudes scale.

Method

Participants

Three hundred twenty-eight (167 males and 161 females) undergraduate students at the College of William & Mary completed a questionnaire in exchange for research credit in an introductory psychology class.

Procedure

Participants completed a questionnaire using one of two formats. They either reported to a room in groups of 15 or less to complete the questionnaire packet in person or they completed an online survey that was part of a daily events study being conducted at the university. For those individual who attended the experimental session, the same procedures were used as those described in Study 1.

Measures

For the most part, the same measures were used in Study 2 as those described in Study 1 (Appendix B). Changes were made however to the restricted attitudes scale in order to address the problems encountered in Study 1. In order to increase scale reliability and discriminatory power, six new items were developed to tap desire to
engage in long-term, committed romantic relationships. The revised items are:

1. Finding a long-term romantic partner is not important to me.
2. I would like to have a romantic relationship that lasts forever.
3. If I never settled down with one romantic partner, that would be okay.
4. I am interested in maintaining a long-term romantic relationship with someone special.
5. I can see myself settling down romantically with one special person.
6. I hope to have a romantic relationship that lasts the rest of my life.

Moreover, the three items from the restricted attitudes scale in Study 1 were retained although two of the items were slightly reworded in order to obtain variance among scores. For instance, the items “Committed sexual relationships are not for me” and “If I met the right person, I would consider having a long-term, committed relationship” were not discriminating items and were slightly reworded to “Long-term romantic relationships are not for me” and “I can easily see myself engaging in a long-term romantic relationship with someone special.”

Results and Discussion

Items developed for the unrestricted attitudes scale, the revised restricted attitudes scale, and items from the original SOI were subjected to a principal components analysis. Preliminary principal components factor analyses conducted separately on male and female participants revealed similar factor structures. Thus, I combined the male and female subsamples to produce a more stable factor structure based on the full sample of 328 participants. As in Study 1, I standardized each item through z-score transformation within the subsamples of males and females before conducting the
analysis in order to control for the effect of sex and differences in the response formats for the attitudinal and behavioral items (Snyder, Simpson, & Gangestad, 1986).

Based on eigenvalue scree (Cattell, 1966) and factor interpretability, three factors accounting for over 60% of the variance were extracted and rotated using an oblique procedure⁵. Factor loadings are presented in Table 6. Twelve items loaded highly (.35 or greater) on the first factor, which reflects an unrestricted attitudes dimension. Ten items loaded highly on the second factor, which reflects a restricted attitudes dimension. Five items load highly on the third factor, which reflects previous sexual behaviors.

As in Study 1, scales were created measuring each factor based on item loading and scale score interpretability. Responses to ten of the twelve items that loaded on Factor 1 were averaged to create an unrestricted attitudes scale score for each participant (Items 1-10). Items 17 and 25 loaded highly on Factor 1, but were excluded from the unrestricted attitudes scale because they cross-loaded on other factors. Responses to seven of the ten items that loaded on Factor 2 were averaged to create a restricted attitudes scale score for each participant (Items 11-16, 18). Items 17, 19, and 20 cross-loaded on other factors and were excluded from the restricted attitudes scale.

As in Study 1, responses to the behavioral items inquiring about number of sexual partners in one’s lifetime and number of sexual partners in the past year were aggregated to form total previous sexual behaviors. I also created an unrestricted previous sexual behavior variable, which was an aggregate of the participant’s lifetime number of brief sexual relationships/total lifetime number of sexual relationships and number of brief sexual relationships in the past year/total number of sexual relationships in past year.

Tables 7 and 8 display the descriptive statistics and internal consistencies for each of the sociosexuality variables. Each of the attitudinal and behavioral scales
demonstrated good internal reliability. There was a particularly large increase in the reliability of the restricted attitudes scale from Study 1 to Study 2. There was still little variability among scores on the restricted attitudes scale ($s = .81$) however, and the distributions for both males and females were negatively skewed. Therefore, items on the restricted attitudes scale were reverse scored and log transformations were conducted to normalize the distributions. For data interpretation, the direction of the relationship between log transformed restricted sociosexual attitudes scores and other variables was reversed. Before conducting any further analyses, log transformations were conducted within the subsamples of males and females to normalize skewed distributions for other variables. This was done specifically for female SOI scores, unrestricted attitudes scores, and total previous sexual behavior scores. Male total previous sexual behavior scores were also normalized using log transformations. The lack of variation among scores on the total previous sexual behaviors scale was due to the sexual inexperience of the sample. As in Study 1, close to half of the sample (47.9%) reported having not yet engaged in sexual intercourse.

Tables 9 and 10 display the correlations between the new sociosexuality variables and the original SOI. As in Study 1, the behavioral scores and unrestricted attitude scores were highly correlated with the original SOI and with each other. The restricted attitudes scale was unrelated to the behavioral measures and only moderately related to the SOI and unrestricted attitudes scale. The magnitude of the relationship between restricted and unrestricted sociosexual attitudes lends support to my argument that these two dimensions are best conceptualized and measured as separate dimensions. For instance, less that 14% of the variability in restricted attitudes can be predicted from the variability in unrestricted attitudes. Moreover, only 9% of the variability in restricted attitudes can be predicted from the variability in SOI scores. This is not a
substantial amount for a scale that is purported to measure long-term/restricted mating versus short-term/unrestricted mating.

To examine the usefulness of a two-dimensional model of sociosexual attitudes, I conducted a repeated measures ANOVA with sex as the between-subjects factor and restricted versus unrestricted attitudes as the within-subjects factor. The items on each attitudinal scale were scored in the direction of unrestricted/low restricted tendencies. In line with current thinking regarding between-sex variation in mating strategies, there was a significant attitude by sex interaction, $F(1,170) = 28.03$, $p < .01$ (see Figure 1). As predicted by SST, males and females differ more in their attitudes toward casual sex ($M_{diff} = 1.30$) than in their attitudes toward long-term, committed relationships ($M_{diff} = 0.13$). Independent samples t-tests revealed that males and females significantly differed on the unrestricted attitudinal dimension ($t(171) = 3.95$, $p < .001$), but did not differ significantly on the restricted attitudinal dimension ($t(171) = .68$, $p = ns$). This finding suggests that a two-dimensional model of sociosexual attitudes more accurately measures male and female mating psychology than the original SOI.
STUDY 3

In Study 3, I sought to externally validate the new sociosexuality measures that were developed in the previous studies, particularly the restricted and unrestricted attitudinal dimensions. Towards this goal, I chose three theoretically meaningful variables that have been previously correlated with the original SOI, and examined how these variables relate to each of the new sociosexuality dimensions. A second, and arguably more important, goal was to demonstrate how these previous empirical relationships may be potentially flawed or misleading, and to examine how a multidimensional measure of sociosexuality clarifies and extends previous findings.

**Romantic Partner Choice**

An important variable to study in relation to sociosexuality is romantic partner choice. In fact, the original frequency-dependent model of sociosexual variation is a model describing female mate choice. According to this model, female alternate mating strategies are guided by distinct preferences for paternal investment versus good genes, and are maintained through genetic polymorphism. The restricted orientation is thought to promote paternal investment, whereas the unrestricted orientation is designed to promote the genetic quality of offspring. As previously discussed, Simpson and Gangestad (1992) found different patterns of mate choice across restricted and unrestricted individuals. Restricted individuals rated attributes pertaining to personal and parenting qualities as being more important in selecting a mate that did unrestricted individuals. Unrestricted individuals, on the other hand, rated attributes pertaining to physical attractiveness and social visibility as more important relative to restricted individuals.
Within conditional models if mating strategies, mate preferences are seen as part of the distinct psychological architecture of long-term and short-term mating strategies, each of which are activated according to the conditions and cues in the local environment. Romantic partner attributes desired in the long-term context evolved to solve the adaptive problems encountered by long-term mating, whereas romantic partner attributes desired in the short-term context evolved to solve the adaptive problems encountered by short-term mating. Accordingly, mate preferences are thought to shift according to the mating context.

Based on the empirical findings by Simpson and Gangestad (1992) and the theoretical framework of conditional mating strategies, I argue that the personal/parenting mate choice dimension defined by Simpson and Gangestad reflects mate preference adaptations that evolved to solve the unique problems encountered when pursuing long-term mating strategies. The attractiveness/social visibility mate choice dimension, however, should reflect mate preference adaptations that evolved to solve the unique problems associated with short-term mating strategies. Moreover, I argue that these mate preference adaptations should be activated to the extent that an individual is psychologically oriented toward long-term and short-term mating. Therefore, preferences for personal/parenting qualities should relate to restricted sociosexual attitudes, and preferences for attractiveness/social visibility should relate to unrestricted sociosexual attitudes.

It is unclear if personal and parenting qualities will inversely relate to unrestricted attitudes or if attractiveness/social visibility will inversely relate to restricted sociosexual attitudes as assumed with respect to the original SOI. For instance, Gangestad & Simpson (2000) argued that males and females have evolved to make strategic trade-offs between long-term and short-term mating based on the conditions in the local
environment. Females are thought to make trade-offs between two mate choice dimensions; paternal investment and good genes. Males, on the other hand, are thought to make trade-offs between long-term and short-term mating based on their personal mate value. Therefore, short-term and long-term mate preferences may be inversely activated due to the trade-offs made in mate choice and mating strategy. Examining the relationships between the two mate choice dimensions and the two dimensions of sociosexual attitudes may clarify these theoretical issues.

**Adult Romantic Attachment**

A variety of empirical and theoretical perspectives suggest that an important factor affecting individual differences in mating strategies is attachment. The idea that the attachment system may somehow influence the extent to which an individual pursues a long-term versus a short-term strategy has evolved out of two separate, yet related lines of research. The first line of research deals primarily with the function and organization of adult romantic attachment. One prevailing view within the adult romantic attachment literature is that the attachment system was co-opted by natural selection in the service of maintaining long-term monogamous relationships (Zeifman & Hazan, 1997). In contrast to the pluralistic models summarized in this paper, Zeifman and Hazan, among others, argue that long-term pair-bonding combined with high levels of parental investment reflects the species-universal reproductive strategy for males and females, and that deviations from this pattern (i.e., short-term mating) represent maladaptations (see also Miller & Fishkin, 1997).

The second line of research focuses on how childhood patterns of attachment affect adult mating strategies. According to this line of research, early family experience is an environmental factor that produces individual differences in adult mating strategies, and childhood attachment is thought to play a key mediating role (Belsky, Steinberg, &
argued from a life history perspective that the quantity and quality of parental care received during childhood, as indexed by the mother-infant attachment experience, serves as an environmental cue signaling which reproductive strategies are best suited to the environment. In their model, low levels of parental investment may signal harsh or demanding environments for which short-term mating strategies are best suited. Conversely, high levels of parental investment may signal environments, which biparental care and long-term pair-bonds are best suited.

Kirkpatrick (1998) sought to integrate and extend the two lines of attachment research with the goal of introducing an alternative theoretical perspective regarding adult romantic attachment. Kirkpatrick argued that adult romantic attachment styles reflect to a large extent the alternative reproductive strategies that are thought to develop from individual differences in early family experience (see also, Chisolm, 1996). According to this model, the secure-versus-insecure dimension of adult romantic attachment reflects long-term versus short-term mating strategies, whereas the anxious or preoccupied dimension reflects self-perceived mate value.

A prediction made by the Kirkpatrick model of adult romantic attachment is that measures of individual differences in sociosexuality (i.e., mating strategy) and measures individual differences in adult romantic attachment styles should share a substantial amount of variance. Contrary to this prediction, however, only weak to moderate relationships have been reported in the literature. For instance, Brennan and Shaver (1995) reported low to moderate correlations (r's = .19 - .42) between various measures of secure-versus-avoidant attachment and the SOI. Although these weak findings have lead some researchers to question the reconceptualization of adult romantic attachment styles as adult reproductive strategies (Simpson & Rholes, 1998), the present research
suggests that the reported relationship between sociosexuality and measures of attachment may be misleading due to the mis-measuring of sociosexuality. I argue based on the following theoretical and empirical considerations that a reexamination of the relationship between adult romantic attachment and adult reproductive strategies is warranted given empirical support for a multidimensional model of sociosexuality.

Both Zeifman and Hazan (1997) and Kirkpatrick (1998) have suggested that the primary difference between avoidant and secure individuals concerns the likelihood of developing an emotional bond that enables romantic relationships to grow into long-term, committed relationships. Zeifman and Hazan argue that avoidant and secure individuals differ in their ability to form clear-cut attachments to other individuals. Kirkpatrick argues that these attachment styles differ in the ability to express the emotion of love, which he argues serves the adaptive function of committing individuals to a single relationship (Frank, 1988). Consistent with these predictions is research demonstrating that avoidant adults are less likely relative to secure adults to believe in or actually experience the emotion of love along with its correlates, closeness and intimacy (Hazan & Shaver, 1987).

This empirical and theoretical evidence suggests that the avoidant versus secure dimension of attachment more strongly reflects the extent to which an individual is able and willing to engage in a long-term, committed relationship rather than willingness to engage in short-term, uncommitted sexual relationships. This provides some insight into why measures of adult romantic attachment, particularly the avoidance dimension, are only weakly correlated with the SOI. As I have demonstrated in Study 1 and Study 2, the SOI shares little variance with measures of attitudes towards long-term, committed relationships, and is primarily a measure of short-term attitudes and behaviors. A multidimensional measure of sociosexuality, which measures long-term/restricted and
short-term/unrestricted attitudes separately, may clarify previous findings regarding attachment and sociosexuality.

**Self-Perceived Mate Value**

Another important factor thought to affect individual differences in mating strategy is *mate value*. Mate value, broadly defined, refers to an individual’s overall desirableness to members of the opposite sex relative to other same sex individuals (Buss, 1999). The ability to assess one’s own standing relative to others in terms of mate value allows individuals to facultatively adjust their allocation of effort to short-term and long-term mating strategies so as to enhance reproductive success. Both Sexual Strategies Theory (SST) and Strategic Pluralism Theory (SPT) suggest that an individual’s perception of his or her mate value will directly influence the mating strategy or mix of strategies adopted by that individual. For instance, Buss and Schmitt (1993) argued that individuals who embody the characteristics preferred by members of the opposite sex are best able to pursue their sex-typical preferred mating strategy. They elaborated on this point for males, specifically stating that males who satisfy the mate preferences of females may more frequently pursue short-term mating strategies, in addition to whatever long-term strategies they pursue. Gangestad and Simpson (2000) further extended this argument by suggesting that a male’s tendency to enact short-term mating strategies should be a direct function of his ability to satisfy the short-term mate preferences of females, which should have been influenced by good-genes sexual selection. Thus, men who embody attributes associated specifically with genetic fitness are best able to pursue short-term mating strategies. Furthermore, a man’s tendency to pursue long-term, committed relationships is expected to be inversely related to his genetic fitness. In contrast to males, female self-perceived mate value is expected to account for less variation in mating strategy because females are thought to track the
demands of the local environment and not necessarily the mate preferences of males. Nevertheless, a female’s ability to satisfy male mate preferences is thought to influence the demands she can place on members of the opposite sex.

Although there is a strong theoretical basis for the hypothesized relationship between self-assessments of mate value and mating strategy, few empirical tests have been conducted. Nevertheless, the empirical evidence that is available is consistent with theoretical predictions. Lalumiere, Seto and Quinsey (1995) reported that men with high self-perceived mate value reported having sexual intercourse earlier, a greater number of sex partners since puberty, a greater number of partners during the past year, a greater number of sexual invitations during the past three years, sexual intercourse a greater number of times, and less need for attachment to a person before having sex, relative to men with low self-perceived mate value. In addition, high self-perceived mate value was related to an unrestricted sociosexual orientation among males, suggesting the pursuit of a short-term mating strategy. Interestingly, self-perceived mate value was not significantly related to female reported sexual history or sociosexual orientation. However, self-esteem proved to be a highly significant predictor of short-term mating among females. Females who scored low on self-esteem reported having a greater number of sex partners since puberty, a greater number of sex partners over the past year, a greater number of one-night stands, a preference for short-term sexual relationships, and an unrestricted sociosexual orientation.

I recently conducted a study to replicate and extend previous findings by analyzing the relationship between self-perceived mate value and sociosexuality in the context of multidimensional models (James, 2003). Following Kirkpatrick & Ellis (2001) self-perceived mate value was reconceptualized as a domain-specific sociometer designed to monitor success in the domain of mating. Accordingly, I was able to
determine the *unique* predictive power of self-perceived mate value by analyzing its relationship with sociosexuality in the statistical context of global and other domain-specific sociometers. Following Bailey et al. (1994), I measured sociosexuality using an expanded version of the SOI and analyzed sociosexual attitudes and behaviors separately. Results replicated and clarified previous findings. Self-perceived mate value was predictive of both attitudes and behaviors above and beyond all measures of global and domain-specific self-esteem, such that males and females high in mate value were more likely to possess unrestricted attitudes and engage in more sociosexual behaviors.

The current research suggests how previous findings may be extended to provide a more complete picture of the relationship between sociosexuality and self-perceived mate value. For instance, the finding that self-perceived mate value is a unique predictor of sociosexual attitudes could be clarified by examining which attitudinal dimensions self-perceived mate value is related. Based on theoretical perspectives discussed regarding mate value, I expect self-perceived mate value to be more strongly related to unrestricted attitudes than restricted attitudes. Moreover, this relationship should be particularly strong for males.

Method

Participants

One hundred seventy-three (94 males and 79 females) of the participants from Study 2 completed an additional set of questionnaires in exchange for research credit in an introductory psychology class. Participants were between the ages of 17 to 23 (*Mdn* = 19).

Procedure

The procedures for Study 3 were the same as those described in Study 1. In addition to reporting their age, sex, and current relationship status, participants
completed an adapted version of the SOI, which included the newly developed restricted and unrestricted attitudinal scales. Participants then responded to the dependent measures.

**Measures**

*Romantic Partner Choice.* The *Romantic Partner Attribute Index* (Simpson & Gangestad, 1992; Appendix C) instructs participants to rate the importance of 15 attributes in terms of how much it influences their selection of a potential mate. Participants responded to this measure using a 9-point Likert-type scale (1 = not at all important and 9 = extremely important).

*Adult Romantic Attachment.* The 36-item *Experiences in Close Relationships* (Brennan, Clark, & Shaver, 1998; Appendix D) scale was developed from a large factor analytic study that examined virtually all of the adult romantic attachment self-report measures available at the time of the study, and measures two essentially orthogonal attachment dimensions, *avoidance* and *anxiety*. The avoidance dimension measures discomfort with closeness and dependence while the anxiety dimension measures anxiety concerning relationship abandonment. Participants responded to this measure using a 7-point Likert-type scale (1 = strongly disagree and 7 = strongly agree).

*Self-Perceived Mate Value.* The *Self-Perceived Mating Success Scale* (Landolt, Lalumiere, & Quinsey, 1995; Appendix E) assesses an individual's perception of how the opposite sex perceives them in terms of attractiveness. For instance, one item states, "Members of the opposite sex are attracted to me." Participants responded to this 8-item measure using a 7-point Likert-type scale (1 = strongly disagree and 7 = strongly agree).
Results and Discussion

Romantic Partner Choice and Sociosexuality

Table 11 displays the correlations between the original SOI, the new sociosexuality attitudinal and behavioral measures and the two romantic partner choice dimensions; personal/parenting qualities and attractiveness/social visibility. The SOI was not significantly related to either mate choice dimension in the total sample. Among males, the SOI was significantly correlated to the attractiveness/social visibility dimension. Therefore, I was unable to fully replicate the findings reported by Simpson and Gangestad (1992).

The mate choice dimensions did relate to the new sociosexual attitudinal and behavioral dimensions; however, many of these findings were confined to the male subsample. Among males, preference for personal/parenting qualities significantly correlated with restricted sociosexual attitudes, but was unrelated to unrestricted sociosexual attitudes. The preference for attractiveness and social visibility was positively related to unrestricted sociosexual attitude, and inversely related to restricted sociosexual attitudes. Both mate choice dimensions were positively related to total previous sexual behaviors. Although there were no significant relationships, the patterns of the relationships between the two mate choice dimensions and two sociosexual attitudinal dimensions among females were similar to those found among males.

Although the two dimensions of sociosexual attitudes are thought to be independent of one another, the empirical measures of them are invariably correlated (see Study 2 for scale intercorrelations), Therefore, I conducted a series of multiple regression analyses to determine which sociosexuality variables uniquely predicted the two romantic partner choice dimensions. These analyses were conducted with the total sample and within each sex. Controlling for sex, none of the new sociosexuality
variables emerged as unique predictors of the importance of personal/parenting qualities in a potential mate. Within the male subsample, restricted attitudes emerged as a unique positive predictor of the importance of personal/parenting qualities in a potential mate ($\beta = .31, p < .05$). There were no significant predictors within the female subsample.

A similar set of multiple regression analyses were conducted predicting the desire for attractiveness/social visibility in a potential mate. Controlling for sex, both restricted attitudes ($\beta = -.27, p < .01$) and total previous sexual behaviors ($\beta = .28, p < .05$) emerged as significant and unique predictors of the importance of attractiveness/social visibility in a potential mate. Multiple regression analyses conducted within each sex revealed that these relationships existed only within the male sample (restricted attitudes, $\beta = -.26, p < .05$; total previous sexual behaviors, $\beta = .26, p = .08$). In fact, none of the sociosexuality variables significantly predicted the desire among females for a potential mate who possesses qualities of attractiveness/social visibility.

*Adult Romantic Attachment and Sociosexuality*

Table 12 displays the correlations between the original SOI, the new attitudinal and behavioral measures and the avoidance and anxiety attachment dimensions. Replicating Brennan & Shaver (1995), the SOI correlated only slightly with the two dimensions of attachment. There was a weak positive relationship between the SOI and avoidance, whereas there was a weak inverse relationship between the SOI and anxiety. The relationships between unrestricted attitudes and the two adult attachment dimensions mirrored those of the SOI and attachment. As predicted, the restricted attitudes scale was more strongly related to the avoidance dimension than the unrestricted attitudes scale. Unrestricted previous sexual behavior was also a
significant correlate of avoidant attachment. Total previous sexual behavior had a weak inverse relationship with the anxiety attachment dimension. The pattern of relationships between sociosexuality and adult attachment were fairly similar across the sexes.

As an extension of the correlational findings, I conducted a series of multiple regression analyses to determine which sociosexuality measures would emerge as unique predictors of both dimensions of adult romantic attachment. In the first analysis, I examined the extent to which the attitudinal and behavioral sociosexuality measures predicted the avoidant attachment dimension. Controlling for sex, restricted attitudes ($\beta = -0.56, p < 0.001$) and unrestricted previous sexual behavior ($\beta = 0.24, p < 0.05$) emerged as significant unique predictors of the avoidance attachment dimension. Within each sex, restricted attitudes remained as a unique predictor of the avoidance dimension for both sexes (males, $\beta = 0.62, p < 0.001$; females, $\beta = 0.51, p < 0.01$); however, unrestricted previous sexual behavior was a significant predictor for females only (males, $\beta = 0.11, p = \text{ns}$; females, $\beta = 0.50, p < 0.05$). A similar set of multiple regression analyses was conducted predicting the anxiety attachment dimension, but none of our new sociosexuality variables emerged as unique predictors. Instead, sex was the only significant predictor of the anxiety attachment dimension with females scoring higher than males ($\beta = 0.25, p < 0.05$).

In a separate analysis, I examined the relationship between self-perceived mate value and the anxiety attachment dimension per Kirkpatrick (1998). There was a significant negative correlation between self-perceived mate value and anxiety for males ($r = -0.23, p < 0.05$). There was not a significant relationship between the two variables for females.
Self-Perceived Mate Value and Sociosexuality

Table 13 displays the correlations between the original SOI, the new sociosexuality attitudinal and behavioral measures and self-perceived mate value. Self-perceived mate value was moderately correlated with the SOI. Self-perceived mate value was also significantly related to participant’s unrestricted attitudes and total previous sexual behavior. The relationships between self-perceived mate value and the two dimensions of sociosexual attitudes remained within the male subsample only when analyses were split by sex. Male who were high in mate value scored higher on the unrestricted attitudes scale and lower on the restricted attitudes scale. These results suggest that males trade-off short-term and long-term mating based on their ability to attract members of the opposite sex, as predicted by Gangestad and Simpson (2000). There were no significant relationships between sociosexual attitudes and self-perceived mate value within the female subsample. Instead, female self-perceived mate value was primarily related to sociosexual behaviors.

Multiple regression analyses were conducted with the total sample and then within each sex to determine which of our new sociosexuality variables uniquely predicted self-perceived mate value. Controlling for sex, total previous sexual behaviors emerged as the only significant predictor of self-perceived mate value ($\beta = .27, p < .05$). Multiple regression analyses conducted within each sex revealed that this predictive relationship existed within the female sample only (males, $\beta = .20, p = .31$; females, $\beta = .49, p < .05$). For males, unrestricted attitudes was the strongest predictor of self-perceived mate value, but the relationship was not significant ($\beta = .25, p = .08$).
STUDY 4

Study 4 was designed as an extension of the findings concerning self-perceived
mate value and multidimensional sociosexuality. A key premise of conditional models of
human mating is that men evolved to allocate effort to short-term versus long-term
mating strategies depending on their ability to satisfy the short-term mate preferences of
females. These preferences, in turn, are thought to have evolved via good-genes sexual
selection, such that females prefer short-term mates who possess honest indicators of
genetic fitness. In Study 4, I examine my multidimensional model of sociosexuality in
relation to male fluctuating asymmetry – an indirect marker of heritable genetic fitness.

Fluctuating Asymmetry

Fluctuating asymmetry measures the degree to which individuals deviate from
perfect bilateral symmetry (Van Valen, 1962), and is believed to be an outcome of
developmental instability (Lerner, 1954; Parsons, 1990). Developmental instability is
defined as “the imprecise expression of developmental design due to perturbations
during development.” (Gangestad & Thornhill, 2003, p.62). Developmental instability is
thought to be affected primarily by (a) mutations (Parson, 1990) (b) and parasites
(Moller, 1992), both of which tend to reduce fitness (Moller & Swaddle, 1997). FA,
therefore, reflects an individual's ability to deal with genetic and environmental stresses
during development. In accordance with good-genes sexual selection, FA is partly
heritable (Moller & Thornhill, 1997) and is related to male mating success in a number of
species, including humans (for a review see Moller & Thornhill, 1998).

In recent years, a substantial amount of research has been conducted examining
the relationship between FA and male mating success in humans. For example,
Thornhill & Gangestad (1994) found that more symmetrical males report more lifetime number of sex partners than less symmetrical men. Additionally, FA predicts number of extra-pair sex partners (i.e., sex partners outside of an existing relationship) for males, and the number of times a male is chosen as an extra-pair partner (Gangestad & Thornhill, 1997). Thus, symmetrical males are more likely to encounter multiple mating opportunities while in a committed relationship, and females are more likely to choose symmetrical males as short-term partners outside of their own existing long-term relationships. Based on these and other important findings regarding FA and male mating success, Gangestad & Simpson have hypothesized that male FA should correlate negatively with the SOI. To test this hypothesis, they examined male FA and its relationship to sociosexuality. Gangestad & Simpson (2000) report a mean correlation across several samples of -.20.

For the purposes of the current study, I seek to examine the relationship between fluctuating asymmetry and a multidimensional model of sociosexuality. Much like self-perceived mate value, I expect fluctuating asymmetry to be more strongly related to unrestricted attitudes than restricted attitudes, as males exhibiting indicators of good genes encountered different reproductive opportunities in the context of short-term mating specifically.

Method

Participants

Sixty-four male undergraduate students at the College of William & Mary participated in exchange for research credit in an introductory psychology class. Participants were between the ages of 18 to 22 (Mdn = 19).
Procedure

Participants reported to a large experimental room in groups of five or less. On arriving, each participant was informed of how the experimental session would proceed and given a consent form to read and sign. Some of the participants were then given a questionnaire packet while the other participants were told to wait at a desk until the experimenter was ready to measure the bilateral traits described in the consent form. The participants that were told to wait were taken one at a time to the back of the room, where the right and left sides of the following nine bilateral traits were measured using a 6-in. digital caliper, sensitive to 0.01mm: ear length, elbow width, wrist width, ankle width, and foot breadth, and lengths of all the fingers excluding the thumb. In order to obtain precise finger measurements, two photocopies were taken of the hands and measured using the digital caliper at a later point in time. These traits were chosen because they have been commonly used in previous studies of FA and have been shown to be largely free of directional asymmetry (Furlow, Armijo-Prewitt, Gangestad, & Thornhill, 1997; Hume & Montgomerie, 2001; Waynforth, 1998). To assess and increase reliability, each trait was measured twice. Upon completion of the body measurements, the participants were then given the questionnaire packet. Additionally, the participants that completed the questionnaire packet first were then instructed to wait for the body measurements.

After the measurements were taken and the questionnaire completed, the participants were thanked and debriefed.

Measures

The participants completed a questionnaire packet that contained an adapted version of the SOI, which included the unrestricted and restricted dimensions. In
addition to a demographics measure, the participants completed the measure of self-perceived mate value that was presented in Study 3.

Results and Discussion

Fluctuating Asymmetry

The two asymmetry measurements were checked for reliability. Cronbach’s alpha of the signed asymmetries ranged from .61 - .94; mean intraclass r = .86. To guard against the effects of large asymmetries due to injury, FA traits that were reported by the participants as injured by break or fracture were excluded from the analysis if they were greater than the mean. In these instances, the mean FA for the trait was substituted for the original FA measurements. This was done for measurement purposes and is equivalent to eliminating these traits from analysis (Thornhill & Gangestad, 1994).

Because measures combining data from multiple traits have been shown to be better indicators of developmental stability than measures using single traits alone, I combined data from all the measured traits into one composite measure of FA (CFA) (Leung, Forbes, & Houle, 2000; Gangestad, Bennett, & Thornhill, 2001). FA of individual traits was calculated by the absolute difference between the right and left sides divided by the mean absolute FA for the trait: individual trait FA = |R - L|/mean |R - L|. A CFA score was calculated by summing the individual trait asymmetries for each participant. This method of standardizing absolute FA values by the mean FA and summing for all traits was chosen because it has been shown to be superior in terms of power and reliability to other composite and single trait measures of FA (Leung, Forbes, & Houle, 2000). Cronbach’s alpha across the two composite measures was .80. The two composite measures were then averaged to create a more reliable index.
Fluctuating Asymmetry and Sociosexuality

There were no significant relationships between CFA and the original SOI ($r = .10, p = .22$), CFA and our restricted and unrestricted attitudinal measures ($r = .03, p = .41; r = -.01, p = .48$), or CFA and previous sexual behaviors ($r = -.03, p = .41$). However, I was able to replicate a previous finding that males low in fluctuating asymmetry report a greater number of extra-pair copulatory partners (EPCs) (Gangestad & Thornhill, 1997). Our analyses revealed a significant negative correlation between CFA and number of EPCs, $r = -.23, p < .04$).

The lack of findings in this study is likely due to limited power. For instance, studies estimating the relationship between FA and developmental instability suggest that FA is a weak indicator of developmental stability, and that studies with fewer than 100 participants have little power to detect meaningful relationships between FA and other fitness-related variables (Gangestad & Thornhill, 1999; 2003).

Fluctuating Asymmetry and Self-Perceived Mate Value

Analyses examining the relationship between CFA and self-perceived mate value revealed a significant negative correlation, $r = -.39, p < .01$. These findings suggest that males with low FA perceive themselves to be more desirable to females relative to males higher in FA.
GENERAL DISCUSSION

Sociosexuality, as it was originally conceived, reflects willingness to engage in casual, uncommitted sex (Gangestad & Simpson, 1990; Simpson & Gangestad, 1991a). The SOI was developed to measure individual differences along this trait. Evidence that the variation underlying sociosexuality is, in part, heritable lead to an evolutionary-based model of individual differences in mating strategy. According to this model, individual differences in sociosexual orientation represent two alternate mating strategies that were evolved and maintained via frequency-dependent selection. Restricted individuals are thought to be predisposed to pursue long-term mating strategies that promote parental investment in offspring. Unrestricted individuals, on the other hand, are thought to be predisposed to pursue short-term strategies that promote the genetic fitness and reproductive capabilities of offspring. Since its development, the SOI has become the leading measure of individual differences in mating strategy. Based on the theoretical model of sociosexual variation, the SOI, as a single bipolar dimension, fully captures the variation underlying mating strategies.

Recent theoretical and empirical developments have led me to question the validity of the SOI as a measure of individual mating strategy. These new perspectives suggest that both males and females evolved to conditionally allocate reproductive effort to short-term and long-term mating strategies based on cues in the local environment. In these models females are thought to track the environment, whereas males are thought to track the demands and desire of females. Additionally, conditional models of mating strategies allow for and often endorse the idea of mixed mating strategies, which involve the pursuit of both long-term and short-term mating either simultaneously or sequentially.
The SOI has not been restructured in accordance with these new theoretical developments. Therefore, the SOI is a potentially misleading measure of individual mating strategy.

I have argued that the SOI must undergo two conceptual modifications for it to capture the full variation in human mating strategies. The first of these modifications involves distinguishing sociosexual attitudes from sociosexual behaviors. According to Sexual Strategies Theory (Buss & Schmitt, 1993), mating strategies comprise two components, the underlying adaptive psychology and the behavioral manifestations of this psychology. As a measure of mating strategies, sociosexual attitudes are best thought of as the underlying adaptive psychology, whereas sociosexual behaviors are best thought of as the behavioral manifestations of the adaptive psychology (Bailey et al., 1994). Unlike sociosexual attitudes, sociosexual behaviors are inevitably constrained by the mating context and thus represent differences in opportunity and constraints rather than individual differences in psychology.

Second, I argued that sociosexual attitudes are best conceptualized and measured as two separate dimensions, as the underlying adaptive psychology of short-term and long-term mating strategies is functionally distinct. According to this model of sociosexual attitudes, restricted attitudes reflect the long-term mating psychology and unrestricted attitudes reflect short-term mating psychology. The attitudinal component of the original SOI largely measures unrestricted attitudes. Therefore, I developed items that would tap an individual's willingness to engage in long-term committed relationships in order to determine their relationship to the unrestricted items contained in the SOI.

The current research was designed with several goals in mind. The first goal was to develop an expanded version of the SOI that could be used to test my proposals for a multidimensional model of sociosexuality. The second goal was to develop and validate
a measure of long-term mating psychology that could be used for future research. And to the extent that these goals were met, the third goal was to examine how a multidimensional model of sociosexuality could clarify and extend previous theoretical and empirical research that had used the SOI as a measure of individual differences in mating strategy.

*Toward a Multidimensional Model of Sociosexuality*

Studies 1 and 2 were designed to test the hypothesis that sociosexuality, as a measure of human mating strategies, is best conceptualized as a multidimensional construct that distinguishes sociosexual attitudes from sociosexual behaviors as well as restricted sociosexual attitudes from unrestricted sociosexual attitudes. To test this hypothesis, I subjected an expanded version of the SOI, which included both restricted and unrestricted attitudinal items, to a principal components analysis and examined the underlying factor structure. As predicted, three factors emerged that corresponded to restricted sociosexual attitudes, unrestricted sociosexual attitudes, and previous sexual behaviors. This factor structure emerged in Study 1 and was replicated in Study 2 using a different sample and improved measures. These findings offer preliminary support for the two conceptual modifications that I have presented. These two modifications will be discussed in turn.

*Sociosexual Attitudes and Sociosexual Behaviors.* The fact that the behavioral items loaded on a separate factor from the attitudinal items offers empirical support for the idea that sociosexual attitudes and behaviors are best conceptualized and measured as distinct constructs. Furthermore, correlational analyses revealed only a moderate relationship between previous sexual behaviors and unrestricted attitudes and a modest relationship between previous sexual behaviors and restricted attitudes. These weak relationships are not surprising given the abundance of social psychological studies.
demonstrating the lack of consistency between attitudes and behaviors (for example, see Deutscher, 1973; Wicker, 1969; see Kraus, 1995 for a different perspective). Nevertheless, these findings have important implications for both the measurement of sociosexuality and the theoretical research describing adaptive variation in mating strategies.

The psychometric properties of the SOI have been demonstrated in a number of previous studies. Although the SOI has been shown to be a reliable measure in these studies (Simpson & Gangestad, 1991a, 1992; Simpson, Gangestad, & Nations, 1995), it possesses only adequate levels of internal consistency (average Cronbach's alpha of .75). The factor analytic and correlational data examined in Study 1 and Study 2 present evidence for why the SOI lacks high levels of internal consistency. By aggregating sociosexual attitudes and sociosexual behaviors into one composite score, two distinct factors that comprise sociosexuality are being confounded (Bailey et al., 1994).

The issue of reliability is particularly important as it is related to the validity of the SOI as a measure of mating strategy. For instance, examination of the reliabilities for the original SOI, the unrestricted attitudes scale, and the total previous behaviors scale demonstrates that the attitudinal items are more internally consistent than the behavioral items, and that these in turn are more reliable than the composite of the two in the original SOI. These findings support the arguments advanced by several theorists that psychological adaptations should be distinguished from their behavioral expression, as the behavioral expression is likely to vary according to the opportunities and constraints of the local environment (Symons, 1989; Tooby & Cosmides, 1990b). By conceptualizing and measuring sociosexual attitudes and sociosexual behaviors as distinct constructs both the psychological adaptations and the behavioral tactics that comprise mating strategies can be examined in relation to other variables of interest.
Determining the level at which adaptive individual differences in mating strategies exist has become a topic of debate in recent years. For instance, some researchers have emphasized the universal nature of sex-specific psychological mechanisms for mating, while others have emphasized adaptive individual differences in the sex-specific psychological architecture for human mating. To provide an example, Buss & Schmitt (1993) have argued for the universal desire of short-term mating among males. According to their perspective, all males should possess a strong desire for short-term mating, although only some males are able to enact short-term tactics. Therefore, individual variation is thought to exist primarily at the behavioral level rather than the psychological level. Gangestad & Simpson (2000) have questioned this argument by suggesting that it would not be adaptive for all males to prefer short-term mating when only a few are able to enact the strategy. Instead, males that are unable to engage in short-term mating should prefer and devote their mating efforts to maintaining long-term relationships. Thus, adaptive individual differences are thought to exist at the psychological level and the behavioral level. My findings regarding the relationship between sociosexual attitudes and sociosexual behaviors in Studies 1 and 2 are more consistent with this latter view given that I found moderate correlations between sociosexual attitudes and behaviors, particularly unrestricted attitudes and previous sexual behaviors. However, more research is needed to address this topic, and a multidimensional measure that distinguishes psychological adaptations (sociosexual attitudes) from behavioral expression (sociosexual behaviors) will no doubt be useful.

Unrestricted and Restricted Sociosexual Attitudes. In Studies 1 and 2 two attitudinal factors emerged that conceptually represented restricted/long-term and unrestricted/short-term sociosexual attitudes. Correlational analyses revealed that the restricted and unrestricted scales only moderately correlated to one another, suggesting
that they are best thought of as two distinct dimensions rather than opposites anchoring the ends of a single continuum. To the extent that the restricted and unrestricted attitudinal items developed for the current research serve as measures of underlying adaptive mating psychology, these findings provide support for models of conditional mixed mating strategies.

Two important findings in Study 2 suggest that the original SOI is a misleading measure of both within- and between-sex variation in mating psychology. For instance, when restricted and unrestricted attitudes are measured separately there appears to be more individual variation in desire for short-term sexual relationships than in desire for long-term, committed sexual relationships. Additionally, the sexes systematically differ more in their desire and willingness to engage in short-term relationships than in their desire and willingness to engage in long-term relationships. This finding, in part, replicates a study conducted by Buss & Schmitt (1993) investigating sex differences in mating orientation. Thus, by conceptualizing sociosexual attitudes along a single bipolar continuum the SOI conflates two temporally distinct dimensions of mating psychology, and that this conflation has consequences for the measurement of both within-sex and between-sex variation in sociosexual attitudes.

Examination of the relationships between the restricted and unrestricted attitudinal dimensions and the original SOI demonstrate that the SOI can be best thought of as a measure of short-term mating orientation. Furthermore, the SOI is primarily a measure of short-term mating behaviors. This is not surprising given that the SOI was developed as a measure of willingness to engage in uncommitted sex. Nevertheless, the SOI has become the leading measure of individual variation in mating strategies, and as I have shown in the current set of studies, this is problematic. The SOI does not map on
conceptually to recent theoretical perspectives concerning the nature of individual differences in mating strategy.

The present research supports the reconceptualization of sociosexuality that I have presented and is consistent with theoretical perspectives portraying short-term and long-term mating as two distinct constructs. Future research using the SOI must take into account its limitations as a measure of human mating strategies. An important goal of this research was to develop a multidimensional measure that could be used in place of the original SOI. In the following section, I address the validity of the scales that I have created and examine how a multidimensional measure of sociosexuality is potentially useful for extending previous research.

The Value of a Multidimensional Model

The results of Studies 1 and 2 provided empirical support for a multidimensional measure of sociosexuality. Therefore, an important next step was to validate the individual sociosexuality measures by demonstrating that they differentially relate to other theoretically relevant variables in meaningful ways. A related and arguably important goal was to determine how a multidimensional measure could clarify and extend previous research. To the extent that long-term and short-term mating orientations are best conceptualized and measured as two distinct constructs, previous research using a single bipolar dimension is potentially limited or misleading. Research using the SOI as a measure of mating strategy has focused on the following topic areas: strategy development, strategy pursuit, and possible constraints on strategy pursuit. Thus, the SOI has been related to variables such as adult romantic attachment, romantic partner choice, and mate value. In Studies 3 and 4, I presented research relating these variables to the original SOI, discussed potential limitations, and hypothesized that a multidimensional measure would extend research in new and interesting directions.
Romantic Partner Choice. Research conducted by Simpson & Gangestad (1992) demonstrated different patterns of mate choice among restricted and unrestricted individuals. Restricted individuals desired mates who had good personal and parenting qualities, whereas unrestricted individuals desired mates who were physically attractive and socially visible. These findings were presented as supporting evidence for their original model of sociosexuality as alternate mating strategies.

A multidimensional model of sociosexuality extends this line of research by conceptualizing the relationship between restricted and unrestricted sociosexual orientations and mate choice as occurring within-individuals as well as between-individuals. Based on models of conditional mating strategies, I hypothesized that individuals’ restricted attitudes would relate to their desire for a mate who possesses good personal/parenting qualities, whereas their unrestricted attitudes would correlate to their desire for mates who are attractive and socially visible. Many of the predicted relationships between sociosexuality and the mate choice dimensions were confirmed, however they were confined to the male subsample. The restricted and unrestricted attitudes related to the attractiveness/social visibility mate choice dimension in opposite directions, producing similar results to the original SOI. Thus, unrestricted attitudes were positively related to the desire for a mate who is physically attractive and socially visible, whereas restricted attitudes were negatively related to the desire for attractiveness/social visibility. The person/parenting qualities dimension was related to restricted attitude, but not unrestricted attitudes.

Although the findings, in part mirror those found previously by using the original SOI, they do not necessarily provide support for a model of alternate mating strategies as suggested by Simpson & Gangestad (1992). For instance, the restricted and unrestricted dimensions could correlate to mate choice dimensions in opposite directions.
if personal and environmental constraints create the need for strategic trade-offs in mate choice. Gangestad and Simpson (2000) suggest in their Strategic Pluralism Theory that this is indeed the case. Specifically, females are thought to make trade-offs between paternal investment qualities and genetic fitness qualities based on environmental cues when selecting mates, whereas males make trade-offs based on their personal mate value. The current findings partially support his hypothesis. However, the current findings are somewhat limited in that they do not address the qualities that are essential to the individual when selecting a mate in the different temporal contexts. An interesting topic for future research involves examining the interaction between an individual's short-term and long-term mating preferences and what they consider to be a necessity versus a luxury in a potential mate. For instance, Li, Bailey, Kenrick, and Linsenmeier (2002) have found that by placing constraints on a mate preference task (i.e., providing participants with different “mating budgets”) one can distinguish the qualities that are considered a necessity for that individual versus those that are considered a luxury.

An interesting way to extend the current findings would be to examine the trade-offs that people make in constrained mate choice tasks based upon the interaction between their orientations toward long-term and short-term mating. For example, individuals who possess a high orientation toward long-term mating and a low orientation toward short-term mating may differ in the qualities that they consider necessities and luxuries from individuals who possess a high orientation toward both short-term and long-term mating. In the first set of individuals we might find that personal/parenting qualities are essential whereas physical attractiveness and social visibility are luxuries. However, in the second set of individuals we may find that both sets of qualities are necessities, but that expression of the preference for either set is based on temporal context (pursuing a long-term versus a short-term partner). In this way, individual
differences in mixed mating strategy could be related to individual differences in mate preference trade-offs.

Adult Romantic Attachment. Kirkpatrick (1998) presented a compelling case for the reconceptualization of adult romantic attachment as reproductive strategies. Kirkpatrick hypothesized that the avoidance dimension of attachment would strongly relate to sociosexuality. Contrary to this prediction, previous research has demonstrated only modest relationships between the avoidance dimension of attachment and sociosexuality. Based on previous theoretical and empirical research, I argued that the avoidance dimension more strongly reflects the extent to which an individual is willing to engage in a long-term, committed relationship. The findings from Study 2 suggesting that the original SOI is primarily a measure of short-term/unrestricted attitudes and behaviors, lead me to suggest that the previous research examining the relationship between the avoidance dimension and sociosexuality is likely misleading.

Indeed, the results of Study 3 show that the original SOI, as a single bipolar continuum of long-term and short-term mating strategies, dramatically underestimates the relationship between avoidance and mating strategies. As predicted, the avoidance dimension was strongly correlated with the restricted attitudes dimension, but only modestly related to the unrestricted attitudes dimension. Thus, the use of a multidimensional model of sociosexuality helped to clarify the relationship between adult romantic attachment and sociosexuality. Additionally, these findings provide empirical support for Kirkpatrick’s reconceptualization of adult romantic attachment.

Self-Perceived Mate Value. In a previous study, I found that self-perceived mate value was uniquely predictive of sociosexual attitudes and behaviors. As an extension of this work, I sought to replicate my previous findings as well as examine the relationship between the two attitudinal dimensions and self-perceived mate value. Based on SST
and SPT, I hypothesized that self-perceived mate value would be more strongly related to the unrestricted attitudinal dimension than the restricted dimension, and that this pattern would be particularly evident among males. In Study 3, self-perceived mate value did correlated moderately with the SOI for both males and females replicating previous findings. Among males, restricted and unrestricted attitudes correlated with self-perceived mate value in opposite directions, mirroring the results produced by the original SOI. Self-perceived mate value also related to male previous sexual behaviors. These results suggest that males who are high in mate value are more psychologically and behaviorally oriented toward short-term mating than males of relatively lower mate value. For females, self-perceived mate value was completely unrelated to the attitudinal component of sociosexuality. However, self-perceived mate value was related to their previous sexual behaviors, suggesting that females who have high mate value differ in the number of mating opportunities they encounter, but not in their psychological orientation toward mating.

Mate value, as a variable that acts within each sex to constrain mating behaviors, is a unique candidate for examining the level at which adaptive individual differences in mating strategies exist. This would involve examining how self-perceived mate value is differentially related to sociosexual attitudes and behaviors. Such research would address the unanswered question of how the underlying evolved sexual psychology of males and females shift in accordance with environmental constraints (differential access to preferred mates). The multidimensional conceptualization and measure of sociosexuality that I have developed in this paper will no doubt prove useful for future research examining the relationship between mate value and the distinct components of mating strategies.
Fluctuating Asymmetry. Study 4 was designed to extend the findings of Study 3 regarding self-perceived mate value. Gangestad & Simpson (2000) argued that males who embody attributes associated specifically with genetic fitness are best able to pursue short-term mating. Therefore, genetic fitness is a factor mediating the relationship between mate value and unrestricted attitudes and behaviors. Previous research in this area has demonstrated that fluctuating asymmetry, an indirect marker of heritable genetic fitness, is inversely related to the original SOI (Gangestad & Simpson, 2000). Therefore, males low in FA are more likely to possess an unrestricted sociosexual orientation whereas males high in FA are more likely to possess a restricted sociosexual orientation.

In Study 4, I reexamined the relationship between sociosexuality and FA to see how the use of my multidimensional model could extend previous findings. Following my predictions with self-perceived mate value, I hypothesized that FA would relate to both sociosexual behaviors and attitudes, with a stronger relationship existing between FA and unrestricted attitudes than between FA and restricted attitudes. Contrary to these predictions no significant relationships emerged between my sociosexuality measures and FA. Given the small sample size, it is possible that I did not have enough power to detect meaningful relationships. For instance, Gangestad & Thornhill (2003) estimated that sample sizes greater than 100 are needed to detect meaningful relationships between FA and measures of sexuality. This is due to the fact that FA is an imperfect measure of the underlying developmental stability of an individual. A related issue that may play an important role in the power to detect relationships between FA and other variables of interest is the limited exposure of individuals growing up in industrial nations, where vaccines and medications are readily available, to the detrimental effects of pathogens. For instance, individuals in a population may differ in their proneness to
develop asymmetries for at least three reasons (Gangestad & Thornhill, 2003). The first source of variation concerns the ability to resist developmental perturbation, while the second source relates to exposure to environmental and genetic perturbations. The final source of variation is related to individual growth parameters that modulate noise in the system. Although the relative contributions of these different sources of variation in FA are not known, one could speculate that the use of American college samples potentially makes detecting the relationship between FA and measures of sexual behavior all the more difficult given their limited exposure to a major source of environmental stress.

Although there were no significant relationships between sociosexuality and FA, there was a significant relationship between FA and self-perceived mate value. Surprisingly, previous research has not examined how FA relates to self-perceptions of mate value, attractiveness, or desirability. The results of Study 4 suggest that more symmetrical males perceive themselves as being more desirable to members of the opposite sex than less symmetrical males. Future research should focus on the possible mediating role of self-assessments in the relationship between FA and mating success.

The use of a multidimensional model of sociosexuality can possibly extend future research examining the relationship between FA and male mating success in the following ways. First, most of the research in this area has focused on behavioral measures (e.g., number of lifetime sex partners, number of extrapair copulations) to the exclusion of psychological measures. To my knowledge, there are no empirical studies demonstrating the relationship between measures of psychological orientation towards short-term and long-term mating and FA, apart from those studies using the SOI. However, in these studies the attitudinal and behavioral components of the SOI are aggregated to create a single composite score. Therefore, an interesting question for future research to address is how personal characteristics, such as FA, differentially
relate to mating psychology and its manifest behaviors. If a significant relationships emerge between FA and measures of mating psychology, then another interesting line of research will involve how FA differentially relates to short-term and long-term mating psychology.

Summary. These studies demonstrate how a multidimensional model of sociosexuality can clarify and extend previous findings between the SOI and other theoretically relevant variables. Studies 3 and 4 represent important steps in the validation process. A strength of these studies is that I was able to demonstrate the different ways that a multidimensional measure of sociosexuality relates to other variables of interest. For instance, in some cases (e.g., attachment), the restricted dimension was strongly correlated to a particular variable whereas the unrestricted dimension was only slightly correlated or uncorrelated with the variable. In other cases (e.g., romantic partner choice and mate value), the restricted and unrestricted dimensions correlated with a variable in opposite directions, per the original SOI. Overall, the findings demonstrate that a multidimensional measure is useful for understanding how variables relate to mating strategies.

Limitations

There are several important limitations to consider when evaluating the results of the current set of studies. One important limitation concerns the sole use of exploratory factor analysis to test predictions regarding the factor structure underlying the sociosexuality items. Although exploratory factor analysis is an acceptable technique for examining the consistency between a priori hypotheses regarding factor structure and the actual structure that emerges, it is not designed to test specific hypotheses. Given that my hypotheses were based on theories of mating strategies, which could be used to specify factor models a priori, confirmatory factor analysis would have been an
especially useful technique. However, since a primary goal of Study 2 was to develop valid and reliable measures of the sociosexuality dimensions, I chose exploratory factor analysis over confirmatory factor analysis, as it is particularly useful for scale construction. An important next step in this line of research will involve the replication of the factor structure obtained in Studies 1 and 2 with the use of confirmatory factor analysis. A brief summary of how confirmatory factor analysis can be used to further extend the current line of research is presented in the next section.

Another important limitation concerns the ceiling effects encountered with the restricted attitudes scale. An examination of the overall spread of scores on the restricted attitudes scale shows that almost every participant endorsed to some degree the pursuit of a long-term, committed relationship. This finding causes some concern regarding the validity of the restricted attitudes scale as an individual differences dimension, and it raises some interesting theoretical questions about the nature of the long-term mating system. As will become apparent, replication is required in a more diverse and representative sample before strong conclusions can be drawn about the validity of the restricted attitudes scale.

One possible factor contributing to the lack of variation on the restricted attitudes dimension is the nature of the sample. The sample consisted of undergraduate students at the College of William and Mary, a very small and prestigious university that recruits some of the nation's top students. With its small size and stringent admission criteria, it is possible that the undergraduate population at William and Mary is less diverse than at other public universities. Additionally, data obtained from a larger, more diverse public institution regarding the sexual behaviors of the undergraduate population demonstrates that the sample obtained for these studies may be more sexually conservative on average. For instance, a recent study conducted at a large public university in the
Southwest found that 68% of the undergraduate sample had engaged in sexual intercourse at some point during their lifetime (Campus Health Services, 2004). In contrast, only 52% of the sample obtained for Study 2 had engaged in sexual intercourse at the time of the study. Furthermore, the SOI scores of the William and Mary sample were relatively low compared to the original sample used to validate the SOI (Simpson & Gangestad, 1991a).

The issue of conservatism is multifactorial and is linked to another potential limiting factor, socially desirable responding. Previous research has examined two types of socially desirable responding, self-deceptive enhancement and impression management in relation to sociosexuality. Meston, Heiman, Trapnell, and Paulhus (1998) found that even under anonymous conditions both males and females high in impression management were more likely to respond conservatively to sociosexuality items. In another study, Rowatt and Schmitt (2003) reported a modest negative relationship between impression management and sociosexuality. Rowatt and Schmitt also found a positive correlation between impression management and sexual restraint; however, there were no significant correlations between impression management and variables related to restricted attitudes, such as emotional investment and relationship exclusivity. Unfortunately, both conservatism and socially desirable responding were not assessed in the current set of studies. These issues highlight the need for replication in a larger and more diverse sample, and make it clear that including variables that are potentially confounded with self-report measures of sociosexual attitudes and behaviors is necessary.

From a psychometric standpoint, the lack of variability in restricted attitudes is a potential limitation of the scale. However, the lack of individual differences in restricted attitudes raises an important theoretical question. How much variance should we expect
on the restricted dimension? Is it an individual difference dimension or is human nature such that everyone wants to be involved in a committed relationship at some point during their lifetime? There are some theoretical arguments that support this perspective. For instance, many of the theories describing variation in mating strategies argue that the primary strategy for the majority of males and females involves the pursuit of a long-term, committed relationship with the pursuit of short-term opportunistic mating as a secondary tactic used when the costs are low and the benefits are high (Buss, 1998; Fisher, 1992; Gangestad & Simpson, 2000). This mixed mating strategy would involve little variation in individual psychological orientation towards long-term mating, and possibly a substantial amount variation in the individual orientation towards short-term mating. The anthropological data on marriage and pair-bonding support this view of human mating strategies. For instance, data suggest that pair bonding is the predominant mating tactic in all contemporary societies (Fisher, 1989, 1992; Lancaster & Kaplan, 1992). Furthermore, all cultures have procedures for initiating and sustaining long-term pair-bonds (Daly & Wilson, 1988), suggesting that pair-bonding is a human universal. Short-term mating also appears to be universal, but tends to present itself in the form of opportunistic extra-pair mating (Fisher, 1992), supporting the notion of a mixed mating strategy. The data that I have presented as part of Study 2 are consistent with this conceptualization of mixed mating strategies. However, the results of Study 3 demonstrate that the variance captured by the restricted attitudes scale is meaningful in that it relates to theoretically relevant variables, such as adult romantic attachment.

It is clear that much research still needs to be done in terms of conceptualizing and measuring long-term mating psychology. The restricted attitudes scale that I developed in Study 2 represents just one attempt to create a valid measure. The focus of Study 2 was to create a measure of general psychological orientation towards long-
term mating. However, it might be useful in the future to build trade-offs into the items as a way to measure how much effort an individual is willing to allocate to long-term, committed relationships (i.e., trading off other important life goals to pursue long-term relationships). This method of assessing individual differences in desire for long-term mating may allow for more measurable variance.

A final limitation that needs to be addressed concerns the conceptualization and measurement of the sociosexual behaviors factor. The original SOI primarily assesses number of previous sexual partners, which is a limited and potentially misleading conceptualization of the behavioral tactics involved in the pursuit of a sexual strategy. For instance, something that I have tried to address in the current set of studies is the need to isolate previous short-term sexual behaviors from total previous sexual behaviors. An examination of the possible scenarios demonstrates why this is necessary. Imagine two individuals, one who has engaged in a serious long-term relationship for four years and then dated two other individuals during the past year and one who has engaged in three brief sexual relationships over the past five years. Both individuals have had the same number of sexual partners over the past five years, but in different temporal contexts. By relying on previous number of sexual partners as the primary indicator of sociosexual behaviors, important individual differences between the two individuals may be overlooked.

To address this problem, I developed a ratio measure (short-term partners/total partners) in order to assess unrestricted sexual behaviors and analyzed its relationship to other variables of interest. However, this measure isn't necessarily intuitive and it only maps onto the unrestricted attitudes dimension. It is important that the attitudinal and behavioral dimensions link to some extent for natural selection to have operated on the attitudinal/psychological component of mating strategies. Therefore, an important
next step for validation of a multidimensional model of sociosexuality involves developing a better conceptualization and measure of the sociosexual behavioral factor. Future research is needed to determine the types of sexual behaviors that map onto the restricted dimension. This may involve broadening the behavioral component to include commitment and investment behaviors that are indirectly related to sexuality.

**Future Directions**

Although I have already mentioned several directions for future research, I would like to elaborate on two specific line of research in the following section. The first line of research involves the use of confirmatory factor analysis to extend the current research findings. As previously discussed, an important next step involves replication of the factor structure obtained in Study 1 and Study 2 with confirmatory factor analysis. This research would involve examining a series of structural models to see which model best fits the data. For instance, comparisons can be made between three specific models. The first model would allow each item to load on a single latent factor. This model could then be compared to one in which each item is allowed to load on one of three uncorrelated factors. A final comparison, would involve comparing the orthogonal model to one in which the three factors are allowed to correlate. In this way, hypotheses can be tested regarding the latent structure of the sociosexuality items and the intercorrelations between the latent factors.

Confirmatory factor analysis would also be useful in addressing questions regarding the conceptualization and measurement of the sociosexuality factors. Since we cannot readily observe the psychological mechanisms responsible for short-term and long-term mating behaviors one must rely on imperfect observable measures. As I have discussed in the previous section, the measurement of some of sociosexuality factors is limited, and may require the use of multiple indicators. For instance, I have suggested
that conceptualizing and measuring sociosexual behaviors as previous number of sexual partners is limited in that it does not map onto the restricted attitudes dimension. It is also potentially misleading as a measure of restricted behaviors. To address these issues, I have argued that it may be useful to broaden the behavioral category to include commitment and investment behaviors. By expanding the sociosexuality measures developed in Study 2 to include multiple and diverse indicators of short-term and long-term mating psychology and behaviors, more comprehensive models can be developed that will our enhance ability to test the interrelations among the latent constructs.

Confirmatory factor analysis will not doubt be helpful in this endeavor.

Another important avenue for future research involves the integration of research modeling the relationships between long-term and short-term mating based on self-report data and research examining the same relationship at the neurophysiological level. For instance, current research being conducted by Helen Fisher suggests that different neural mechanisms are responsible for the emotional systems that underlie short-term and long-term reproductive strategies. Fisher (1998) has proposed that there are three interrelated yet distinct emotion systems associated with mammalian reproduction. The first of these systems is labeled by Fisher as the sex drive or lust, and is characterized by the desire to have sex with other individuals. The second system is labeled attraction, and is characterized by increased attention and mating effort toward preferred mating partners. The attachment system is characterized by the development of close social bonds, such as those found in long-term pair-bonds. Fisher argues that during hominid evolution each emotion system became increasingly independent of the other at both the functional and neurophysiological level. For instance, Fisher proposes that the sex drive evolved to motivate individuals to engage in sexual activity with other individuals, and presents evidence demonstrating that sexual arousal is primarily
associated with the sex hormones, testosterone and estrogen. The attraction system, on the other hand, evolved to facilitate mate choice, and is associated with the catecholamines. Attachment evolved to promote long-term pair-bonding and parental investment in offspring. Recent research suggests that the attachment system is regulated by the neuropeptides, vasopressin and oxytocin.

According to Fisher, it is the neurophysiological independence of the three emotion systems that enables hominids to pursue a mixture of short-term and long-term strategies simultaneously or in succession. Fisher's review of the neurophysiological literature offers an interesting complement to the current research, and suggests that the mechanism that underlie short-term and long-term mating strategies are functionally distinct at both the psychological and neurological level. The integration of these two levels of analysis is an important for goal for future research.

Conclusion

Recent theoretical perspectives concerning the nature of individual differences in mating strategies have focused less on conceptualizations of alternate mating strategies and more on the evolution of conditional mixed mating strategies. I have suggested that the SOI, the leading measure of human mating strategies, does not map onto conditional models of mixed mating strategies, and that a multidimensional measure is required. The results of the four studies presented in this thesis provide strong support for a multidimensional model of sociosexuality. Moreover, these studies suggest that future research should by guided by the conceptualization of mixed mating strategies rather than the conceptualization of alternate mating strategies.
TABLE 1

FACTOR LOADINGS OF ITEMS ON THE SOI, UNRESTRICTED ATTITUDES SCALE, AND RESTRICTED ATTITUDES SCALE: STUDY 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>I could enjoy sex with someone I find highly desirable even if that person doesn't have long-term potential.</td>
<td>0.83</td>
<td>0.11</td>
<td>0.01</td>
</tr>
<tr>
<td>I can imagine myself enjoying a brief sexual encounter with someone I find very attractive.</td>
<td>0.81</td>
<td>0.00</td>
<td>0.10</td>
</tr>
<tr>
<td>I could easily imagine myself enjoying one night of sex with someone I would never see again.</td>
<td>0.81</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>I would never consider having a brief sexual relationship with someone.</td>
<td>-0.80</td>
<td>0.00</td>
<td>-0.09</td>
</tr>
<tr>
<td>I would consider having sex with a stranger, if I could be assured that it was safe and s/he was attractive to me.</td>
<td>0.76</td>
<td>0.08</td>
<td>0.10</td>
</tr>
<tr>
<td>Sometimes I'd rather have sex with someone I didn't care about.</td>
<td>0.74</td>
<td>-0.03</td>
<td>0.00</td>
</tr>
<tr>
<td>Sex without love is ok.</td>
<td>0.74</td>
<td>0.17</td>
<td>0.03</td>
</tr>
</tbody>
</table>
8. I believe in taking sexual opportunities when I find them.  
   0.66  0.19  0.00

9. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.  
   -0.60 -0.26  0.07

10. I can't imagine spending the rest of my life with one sex partner.  
    0.55 -0.16 -0.32

11. How often do you fantasize about having sex with someone other than your current dating partner?  
    0.52 -0.09 -0.05

12. With how many partners of the opposite sex do you foresee having sexual intercourse during the next five years?  
    0.44  0.38  0.05

13. During your entire life, with how many partners of the opposite sex have you had sexual intercourse?  
    0.07  0.93 -0.03

14. With how many partners of the opposite sex have you had sexual intercourse within the past year?  
    0.02  0.88 -0.09

15. With how many partners of the opposite sex have you had sex on one and only one occasion?  
    0.10  0.82  0.03

16. If I met the right person, I would consider having a long-term committed relationship.  
    -0.23  0.02  0.70

17. I would like to have at least one committed sexual relationship during my lifetime.  
    0.30 -0.14  0.70
18. Committed sexual relationships are not for me. 0.02 0.02 -0.68

Note. N = 200 (101 males and 99 females). Items were standardized within the subsamples of males and females to control for sex and eliminate differences in response format. Factor 1 corresponds to unrestricted attitudes; Factor 2 corresponds to previous sexual behaviors; Factor 3 corresponds to restricted attitudes.
### TABLE 2
DESCRIMENTIVE STATISTICS AND INTERNAL CONSISTENCIES FOR MEASURES OF SOCIOSEXUALITY: STUDY 1

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Cronbach's $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOI</td>
<td>32.73 (21.45)</td>
<td>29.00</td>
<td>0.80</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>3.07 (1.58)</td>
<td>3.00</td>
<td>0.94</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>6.36 (0.73)</td>
<td>6.67</td>
<td>0.43</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>2.24 (4.26)</td>
<td>0.00</td>
<td>0.83</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>0.50 (0.66)</td>
<td>0.00</td>
<td>0.87</td>
</tr>
</tbody>
</table>
TABLE 3
DESCRIPTIVE STATISTICS AND INTERNAL CONSISTENCIES FOR MEASURES OF SOCIOSEXUALITY, DISAGGREGATED BY SEX OF THE RESPONDENT: STUDY 1

<table>
<thead>
<tr>
<th>Scale</th>
<th>Female Sample</th>
<th>Male Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Median</td>
</tr>
<tr>
<td>SOI</td>
<td>23.48 (17.00)</td>
<td>17.00</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>2.31 (1.29)</td>
<td>1.89</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>6.41 (0.79)</td>
<td>6.67</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>2.20 (4.05)</td>
<td>0.00</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>0.42 (0.58)</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### TABLE 4
INTERCORRELATIONS BETWEEN MEASURES OF SOCIOSEXUALITY: STUDY 1

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SOI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Unrestricted Attitudes</td>
<td>.83**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Restricted Attitudes</td>
<td>-.11</td>
<td>.14*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Total Sexual Behaviors</td>
<td>.61**</td>
<td>.46*</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>5. Unrestricted Sexual Behaviors</td>
<td>.55**</td>
<td>.53**</td>
<td>-.13</td>
<td>.53**</td>
</tr>
</tbody>
</table>

* p<.05. ** p<.01.


<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SOI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.72**</td>
<td></td>
<td>-.13</td>
<td>.61**</td>
<td>.63**</td>
</tr>
<tr>
<td>2. Unrestricted Attitudes</td>
<td>.85**</td>
<td></td>
<td>-.22*</td>
<td>.43**</td>
<td>.62**</td>
</tr>
<tr>
<td>3. Restricted Attitudes</td>
<td>.09</td>
<td>.12</td>
<td></td>
<td>-.03</td>
<td>-.13</td>
</tr>
<tr>
<td>4. Total Sexual Behaviors</td>
<td>.75**</td>
<td>.62**</td>
<td>.10</td>
<td></td>
<td>.53**</td>
</tr>
<tr>
<td>5. Unrestricted Sexual Behaviors</td>
<td>.48**</td>
<td>.40*</td>
<td>.09</td>
<td>.56**</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Male data displayed above the diagonal. Female data displayed below the diagonal.

* * p<.05. ** p<.01.
### TABLE 6

FACTOR LOADINGS OF ITEMS ON THE SOI, UNRESTRICTED ATTITUDES SCALE, AND RESTRICTED ATTITUDES SCALE: STUDY 2

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  I can easily imagine myself being comfortable and enjoying &quot;casual&quot; sex with different partners.</td>
<td>0.92</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>2.  I can imagine myself enjoying a brief sexual encounter with someone I find very attractive.</td>
<td>0.92</td>
<td>0.15</td>
<td>0.04</td>
</tr>
<tr>
<td>3.  I could easily imagine myself enjoying one night of sex with someone I would never see again.</td>
<td>0.90</td>
<td>0.03</td>
<td>-0.01</td>
</tr>
<tr>
<td>4.  Sex without love is ok.</td>
<td>0.89</td>
<td>0.05</td>
<td>-0.07</td>
</tr>
<tr>
<td>5.  I could enjoy sex with someone I find highly desirable even if that person doesn't have long-term potential.</td>
<td>0.85</td>
<td>-0.01</td>
<td>-0.04</td>
</tr>
<tr>
<td>6.  I would consider having sex with a stranger, if I could be assured that it was safe and s/he was attractive to me.</td>
<td>0.84</td>
<td>-0.05</td>
<td>0.13</td>
</tr>
<tr>
<td>7.  I would never consider having a brief sexual relationship with someone.</td>
<td>0.77</td>
<td>0.03</td>
<td>-0.02</td>
</tr>
<tr>
<td>8.  Sometimes I'd rather have sex with someone I didn't care about.</td>
<td>0.72</td>
<td>-0.18</td>
<td>-0.03</td>
</tr>
<tr>
<td>9.  I believe in taking sexual opportunities when I find them.</td>
<td>0.68</td>
<td>-0.16</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Value1</td>
<td>Value2</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>10.</td>
<td>I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.</td>
<td>0.63</td>
<td>0.04</td>
</tr>
<tr>
<td>11.</td>
<td>I am interested in maintaining a long-term romantic relationship with someone special.</td>
<td>0.08</td>
<td>0.86</td>
</tr>
<tr>
<td>12.</td>
<td>I hope to have a romantic relationship that lasts the rest of my life.</td>
<td>-0.10</td>
<td>0.84</td>
</tr>
<tr>
<td>13.</td>
<td>I would like to have a romantic relationship that lasts forever.</td>
<td>0.08</td>
<td>0.78</td>
</tr>
<tr>
<td>14.</td>
<td>Long-term romantic relationships are not for me.</td>
<td>-0.13</td>
<td>0.78</td>
</tr>
<tr>
<td>15.</td>
<td>Finding a long-term romantic partner is not important to me.</td>
<td>-0.09</td>
<td>0.75</td>
</tr>
<tr>
<td>16.</td>
<td>I can easily see myself engaging in a long-term romantic relationship with someone.</td>
<td>-0.02</td>
<td>0.72</td>
</tr>
<tr>
<td>17.</td>
<td>I can't imagine spending the rest of my life with one sex partner.</td>
<td>0.39</td>
<td>-0.52</td>
</tr>
<tr>
<td>18.</td>
<td>I can see myself settling down romantically with one special person.</td>
<td>0.02</td>
<td>0.41</td>
</tr>
<tr>
<td>19.</td>
<td>If I never settled down with one romantic partner, that would be okay.</td>
<td>-0.02</td>
<td>0.40</td>
</tr>
<tr>
<td>20.</td>
<td>I would like to have at least one long-term committed relationship during my lifetime.</td>
<td>0.04</td>
<td>0.37</td>
</tr>
<tr>
<td>21.</td>
<td>How often do you fantasize about having sex with someone other than your current dating partner?</td>
<td>0.21</td>
<td>-0.22</td>
</tr>
</tbody>
</table>
22. During your entire life, with how many partners of the opposite sex have you had sexual intercourse?  

<p>| | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.08</td>
<td>0.05</td>
<td>-0.91</td>
</tr>
</tbody>
</table>

23. With how many partners of the opposite sex have you had sexual intercourse within the past year?  

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.11</td>
<td>0.09</td>
<td>-0.87</td>
</tr>
</tbody>
</table>

24. With how many partners of the opposite sex have you had sex on one and only one occasion?  

<p>| | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.08</td>
<td>-0.07</td>
<td>-0.81</td>
</tr>
</tbody>
</table>

25. With how many partners of the opposite sex do you foresee having sexual intercourse during the next five years?  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.44</td>
<td>-0.11</td>
<td>-0.41</td>
</tr>
</tbody>
</table>

*Note.* N = 328 (166 males and 161 females). Items were recoded and standardized within the subsamples of males and females to control for sex and eliminate differences in response format. Factor 1 corresponds to unrestricted attitudes; Factor 2 corresponds to restricted attitudes; Factor 3 corresponds to previous sexual behavior.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Cronbach's α</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOI</td>
<td>43.52 (24.43)</td>
<td>39.50</td>
<td>0.83</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>3.38 (1.62)</td>
<td>3.30</td>
<td>0.95</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>6.18 (0.90)</td>
<td>6.43</td>
<td>0.88</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>2.58 (4.91)</td>
<td>1.00</td>
<td>0.78</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>0.55 (0.65)</td>
<td>0.28</td>
<td>0.87</td>
</tr>
<tr>
<td>Scale</td>
<td>Female Sample</td>
<td></td>
<td>Male Sample</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------</td>
<td>----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Median</td>
<td>n</td>
</tr>
<tr>
<td>SOI</td>
<td>32.51 (20.13)</td>
<td>26.50</td>
<td>76</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>2.67 (1.42)</td>
<td>2.40</td>
<td>161</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>6.31 (0.86)</td>
<td>6.71</td>
<td>161</td>
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<tr>
<td>Total Sexual Behavior</td>
<td>1.98 (3.60)</td>
<td>0.00</td>
<td>161</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>0.45 (0.64)</td>
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<td>73</td>
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TABLE 9
INTERCORRELATIONS BETWEEN MEASURES OF SOCIOSEXUALITY: STUDY 2

<table>
<thead>
<tr>
<th>Scale</th>
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<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SOI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Unrestricted Attitudes</td>
<td>.83**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Restricted Attitudes</td>
<td>-.30**</td>
<td>-.37**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Total Sexual Behaviors</td>
<td>.61**</td>
<td>.37**</td>
<td>-.12*</td>
<td></td>
</tr>
<tr>
<td>5. Unrestricted Sexual Behaviors</td>
<td>.71**</td>
<td>.47**</td>
<td>-.19*</td>
<td>.48**</td>
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</tbody>
</table>

* p<.05. ** p<.01.
TABLE 10
INTERCORRELATIONS BETWEEN MEASURES OF SOCIOSEXUALITY,
DISAGGREGATED BY SEX OF THE RESPONDENT: STUDY 2

<table>
<thead>
<tr>
<th>Scale</th>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SOI</td>
<td>.80**</td>
<td>-.22*</td>
<td>.77**</td>
<td>.45**</td>
<td></td>
</tr>
<tr>
<td>2. Unrestricted Attitudes</td>
<td>.84**</td>
<td>-.27**</td>
<td>.38**</td>
<td>.35**</td>
<td></td>
</tr>
<tr>
<td>3. Restricted Attitudes</td>
<td>-.41**</td>
<td>-.42**</td>
<td>-.13</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td>4. Total Sexual Behaviors</td>
<td>.62**</td>
<td>.35**</td>
<td>-.07</td>
<td>.47**</td>
<td></td>
</tr>
<tr>
<td>5. Unrestricted Sexual Behaviors</td>
<td>.67**</td>
<td>.60**</td>
<td>-.14</td>
<td>.50**</td>
<td></td>
</tr>
</tbody>
</table>

Note. Male data displayed above the diagonal. Female data displayed below the diagonal.

* p<.05. ** p<.01.
TABLE 11
CORRELATIONS BETWEEN SOCIOSEXUALITY MEASURES AND ROMANTIC PARTNER CHOICE DIMENSIONS: STUDY 3

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<thead>
<tr>
<th>Scale</th>
<th>Total Sample</th>
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<th>Female Subsample</th>
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<tbody>
<tr>
<td>SOI</td>
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<td>.14</td>
<td>.10</td>
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<tr>
<td>Unrestricted Attitudes</td>
<td>-.18*</td>
<td>.05</td>
<td>-.02</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>.26**</td>
<td>-.20*</td>
<td>.33**</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>.17*</td>
<td>.22**</td>
<td>.28**</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>.04</td>
<td>.08</td>
<td>.10</td>
</tr>
</tbody>
</table>

*Note.* P/PQ corresponds to the Personal/Parenting Qualities dimension. A/SV corresponds to the Attractiveness/Social Visibility dimension.
<table>
<thead>
<tr>
<th>Sociosexuality Measures</th>
<th>Total Sample</th>
<th>Male Subsample</th>
<th>Female Subsample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avoidance</td>
<td>Anxiety</td>
<td>Avoidance</td>
</tr>
<tr>
<td>SOI</td>
<td>.18*</td>
<td>-.17*</td>
<td>.15</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>.22**</td>
<td>-.17*</td>
<td>.21*</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>-.54**</td>
<td>.13</td>
<td>-.53**</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>-.05</td>
<td>-.16*</td>
<td>-.01</td>
</tr>
<tr>
<td>Unrestricted Sexual</td>
<td>.38**</td>
<td>-.00</td>
<td>.27*</td>
</tr>
</tbody>
</table>
TABLE 13
CORRELATIONS BETWEEN SOCIOSEXUALITY MEASURES
AND SELF-PERCEIVED MATE VALUE: STUDY 3

<table>
<thead>
<tr>
<th>Sociosexuality Measures</th>
<th>Total Sample</th>
<th>Male Subsample</th>
<th>Female Subsample</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOI</td>
<td>.35**</td>
<td>.32**</td>
<td>.40**</td>
</tr>
<tr>
<td>Unrestricted Attitudes</td>
<td>.23**</td>
<td>.27**</td>
<td>.20</td>
</tr>
<tr>
<td>Restricted Attitudes</td>
<td>-.12</td>
<td>-.22*</td>
<td>.00</td>
</tr>
<tr>
<td>Total Sexual Behavior</td>
<td>.40**</td>
<td>.33**</td>
<td>.47**</td>
</tr>
<tr>
<td>Unrestricted Sexual Behavior</td>
<td>.03</td>
<td>.04</td>
<td>.02</td>
</tr>
</tbody>
</table>

* p<.05. ** p<.01.
FIGURE 1

SOCIOSEXUAL ATTITUDES BY SEX INTERACTION

Sociosexual Attitudes

Sex

Males

Females
APPENDIX A

SOCIOSEXUALITY MEASURE: ADAPTED FOR STUDY 1

Sociosexual Behaviors

Please answer all of the following questions honestly. Please write your answers in the blank spaces and circle the appropriate number on the scales provided.

During your entire life, with how many partners of the opposite sex have you had sexual intercourse? _______________.

Of these, how many can be characterized as brief sexual relationships? _______________.

How many involved high levels of commitment on behalf of your partner? (Commitment is defined as the desire and/or intent to maintain a relationship over the long-term.) _______________.

How many involved high levels of commitment on your part? _______________.

With how many partners of the opposite sex have you had sexual intercourse within the past year? _______________.

Of these, how many can be characterized as brief sexual relationships? _______________.

How many involved high levels of commitment (as defined above) on behalf of your partner? _______________.

How many involved high levels of commitment on your part? _______________.

With how many partners of the opposite sex do you foresee having sexual intercourse during the next five years? (Please give a specific, realistic estimate) _______________.

Of these partners, how many do you foresee yourself having long-term, committed (as defined above) sexual relations? _______________.

Of these partners, how many do you foresee yourself having short-term, uncommitted sexual relations? _______________.

With how many partners of the opposite sex have you had sexual intercourse with on one and only one occasion? _______________.

How many times (# of partners) have you had sexual intercourse with someone other than your relationship partner, while in a committed relationship? ___________.

How often do you fantasize about having sex with someone other than your current dating partner/spouse? (Circle One)

1 = Never
2 = Once every two or three months
3 = Once a month
4 = Once every two weeks
5 = Once a week
6 = A few times each week
7 = Nearly every day
8 = At least once a day

**Sociosexual Attitudes:**

Indicate the degree to which you disagree or agree with each statement below by writing a number between 1 and 7 in the space provided.

1=Strongly disagree  2=Disagree  3=Slightly disagree  4=Neutral  5=Slightly agree  6=Agree  7=Strongly agree

___ I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.

___ Sex without love is ok.

___ I could easily imagine myself enjoying one night of sex with someone I would never see again.

___ I would consider having sex with a stranger, if I could be assured that it was safe and s/he was attractive to me.

___ I believe in taking sexual opportunities when I find them.

___ Sometimes I’d rather have sex with someone I didn’t care about.

___ I could enjoy sex with someone that I that I find highly desirable even if that person doesn’t have long-term potential.

___ I can imagine myself enjoying a brief sexual encounter with someone I find very attractive.

___ I would never consider having a brief sexual relationship with someone. (RS)

___ Committed sexual relationships are not for me. (RS)

___ I can’t imagine spending the rest of my life with one sex partner. (RS)
If I met the right person, I would consider having a long-term committed relationship.

I would like to have at least one committed sexual relationship during my lifetime.
APPENDIX B

SOCIOSEXUALITY MEASURE: ADAPTED FOR STUDY 2

Sociosexual Behaviors

Please answer all of the following questions honestly. Please write your answers in the blank spaces and circle the appropriate number on the scales provided.

During your entire life, with how many partners of the opposite sex have you had sexual intercourse? _________________.

Of these, how many can be characterized as brief sexual relationships? _________________.

How many involved high levels of commitment on behalf of your partner? (Commitment is defined as the desire and/or intent to maintain a relationship over the long-term.) _________________.

How many involved high levels of commitment on your part? _________________.

With how many partners of the opposite sex have you had sexual intercourse within the past year? _________________.

Of these, how many can be characterized as brief sexual relationships? _________________.

How many involved high levels of commitment (as defined above) on behalf of your partner? _________________.

How many involved high levels of commitment on your part? _________________.

With how many partners of the opposite sex do you foresee having sexual intercourse during the next five years? (Please give a specific, realistic estimate) _________________.

Of these partners, how many do you foresee yourself having long-term, committed (as defined above) sexual relations? _________________.

Of these partners, how many do you foresee yourself having short-term, uncommitted sexual relations? _________________.

With how many partners of the opposite sex have you had sexual intercourse with on one and only one occasion? _________________.


How many times (# of partners) have you had sexual intercourse with someone other than your relationship partner, while in a committed relationship? ____________.

How often do you fantasize about having sex with someone other than your current dating partner/spouse? (Circle One)

1 = Never
2 = Once every two or three months
3 = Once a month
4 = Once every two weeks
5 = Once a week
6 = A few times each week
7 = Nearly every day
8 = At least once a day

**Sociosexual Attitudes:**

**Indicate the degree to which you disagree or agree with each statement below by writing a number between 1 and 7 in the space provided.**

1 = Strongly disagree 2 = Disagree 3 = Slightly disagree 4 = Neutral 5 = Slightly agree 6 = Agree 7 = Strongly agree

_____ I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.

_____ Sex without love is ok.

_____ I can imagine myself being comfortable and enjoying “casual” sex with different partners.

_____ I could easily imagine myself enjoying one night of sex with someone I would never see again.

_____ I believe in taking sexual opportunities when I find them.

_____ I could enjoy sex with someone that I find highly desirable even if that person doesn’t have long-term potential.

_____ Sometimes I’d rather have sex with someone I didn't care about.

_____ I would never consider having a brief sexual relationship with someone.

_____ I can imagine myself enjoying a brief sexual encounter with someone I find very attractive.
I would consider having sex with a stranger, if I could be assured that it was safe and s/he was attractive to me.

I can't imagine spending the rest of my life with one sex partner.

Finding a long-term romantic partner is not important to me.

I can easily see myself engaging in a long-term romantic relationship with someone.

I would like to have at least one long-term committed relationship during my lifetime.

I would like to have a romantic relationship that lasts forever.

If I never settled down with one romantic partner, that would be okay.

I am interested in maintaining a long-term romantic relationship with someone special.

Long-term romantic relationships are not for me.

I can see myself settling down romantically with one special person.

I hope to have a romantic relationship that lasts the rest of my life.
## APPENDIX C

### ROMANTIC PARTNER ATTRIBUTE INDEX

Using the following scale, please rate how important the following attributes are for you in a potential romantic partner.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attractive face/Attractive body</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Desire children</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<td>9</td>
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<tr>
<td>Emotionally stable</td>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Faithful to partners/ loyal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
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<tr>
<td>Fun and exciting</td>
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<td>3</td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
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<tr>
<td>Good parenting skills</td>
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<td>Good sense of humor</td>
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<td>Have sex appeal/sexy</td>
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<td>9</td>
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<td>8</td>
<td>9</td>
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<td>Now have financial resources/Will have financial resources</td>
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<td>4</td>
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<td>6</td>
<td>7</td>
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<td>9</td>
</tr>
</tbody>
</table>
APPENDIX D

EXPERIENCES IN CLOSE RELATIONSHIPS SCALE

Indicate the degree to which you disagree or agree with each statement below by writing a number between 1 and 7 in the space provided.

1=Strongly disagree  2=Disagree  3=Slightly disagree  4=Neutral  5=Slightly agree  6=Agree  7=Strongly agree

____ I prefer not to show a partner how I feel deep down.
____ I worry about being abandoned.
____ I am very comfortable being close to romantic partners.
____ I worry a lot about my relationships.
____ Just when my partner starts to get close to me I find myself pulling away.
____ I worry that romantic partners won't care about me as much as I care about them.
____ I get uncomfortable when a romantic partner wants to be very close.
____ I worry a fair amount about losing my partner.
____ I don't feel comfortable opening up to romantic partners.
____ I often wish that my partner's feelings for me were as strong as my feelings for him/her.
____ I want to get close to my partner, but I keep pulling back.
____ I often want to merge completely with romantic partners, and this sometimes scares them away.
____ I am nervous when partners get too close to me.
____ I worry about being alone.
____ I feel comfortable sharing my private thoughts and feelings with my partner.
My desire to be very close sometimes scares people away.
I try to avoid getting too close to my partner.
I need a lot of reassurance that I am loved by my partner.
I find it relatively easy to get close to my partner.
Sometimes I feel that I force my partners to show more feeling, more commitment.
I find it difficult to allow myself to depend on romantic partners.
I do not often worry about being abandoned.
I prefer not to be too close to romantic partners.
If I can’t get my partner to show interest in me, I get upset or angry.
I tell my partner just about everything.
I find that my partner(s) don’t want to get as close as I would like.
I usually discuss my problems and concerns with my partner.
When I’m not involved in a relationship, I feel somewhat anxious and insecure.
I feel comfortable depending on romantic partners.
I get frustrated when my partner is not around as much as I would like.
I don’t mind asking romantic partners for comfort, advice, or help.
I get frustrated if romantic partners are not available when I need them.
It helps to turn to my romantic partner in times of need.
When romantic partners disapprove of me, I feel really bad about myself.
I turn to my partner for many things, including comfort and reassurance.
I resent it when my partner spends time away from me.
APPENDIX E

SELF-PERCEIVED MATING SUCCESS SCALE

Indicate the degree to which you disagree or agree with each statement below by writing a number between 1 and 7 in the space provided.

1=Strongly disagree  2=Disagree  3=Slightly disagree  4=Neutral  5=Slightly agree  6=Agree  7=Strongly agree

____ Members of the opposite sex that I like, tend to like me back.

____ Members of the opposite sex notice me.

____ I receive many compliments from members of the opposite sex.

____ Members of the opposite sex are not very attracted to me.

____ I receive sexual invitations from members of the opposite sex.

____ Members of the opposite sex are attracted to me.

____ I can have as many sexual partners as I choose.

____ I do not receive many compliments from members of the opposite sex.
NOTES

1 An orthogonal rotation yielded a similar factor structure with similar item loadings. However, the oblique rotation pattern matrix yielded a clearer simple structure.

2 An orthogonal rotation yielded a similar factor structure with similar item loadings. However, the oblique rotation pattern matrix yielded a clearer simple structure.

3 As cited in Buss 1999. The authors of this unpublished manuscript maintain that the manuscript is no longer being made available to researchers.
REFERENCES


VITA

Jenée James

Jenée James was born in Lubbock, Texas on August 27, 1978. She graduated from Grapevine High School in May 1996. Jenée James received her B.A. at the University of Texas at Austin in 2000 with a degree in Psychology. After receiving her undergraduate degree, Jenée James worked as a statistical analyst for Aon Consulting in New York, NY.

In August 2002, the author entered the College of William and Mary as a graduate assistant in the Department of Psychology. Jenée James defended her thesis in June of 2004. She is currently working toward her Ph.D. at the University of Arizona in the Department of Family Studies and Human Development.