Sexual Activity and Risk Taking in Young Heterosexual Men: The Relevance of Sexual Arousability, Mood, and Sensation Seeking

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In this research we explored three aspects of personality relevant to sexual activity and sexual risk taking in heterosexual men. Men with low inhibition of sexual arousal in the face of risk (low SIS2) reported more partners with whom they use no condoms and more lifetime "one night stands." Men who experience increased sexual interest in states of depression (MSQ) reported more partners in the past year and more one night stands. The disinhibition subscale of the Sensation Seeking Scale was predictive of whether sexual intercourse had occurred in the past 6 months, and also of the number of sexual partners in the past year. A measure of an intention to practice safer sex was strongly related to measures of sexual arousability and inhibition (SIS/SES). We discuss some clear similarities and also some interesting differences with a parallel study of gay men. Individual differences in sexual excitation and inhibition proneness and the relation between mood and sexuality are clearly relevant to high-risk sexual behavior and should be taken into consideration when designing behavioral interventions.

Sexual risk taking by heterosexual men is important to the high levels of sexually transmitted infections (STIs) and unplanned pregnancies that prevail in the United States, as well as to the growing threat of HIV and AIDS. Most research into methods for reducing high-risk sexual behavior (HRSB) has, until recently, focused on the dissemination of information and the encouragement of rational decision making during sexual activity. It has become increasingly apparent, however, that whereas such information may be sufficient to keep many men out of trouble, there remain many others who are seemingly unaffected by it. This has led to increasing attention to "skills training" and less "rational" processes that might influence sexual decision making, particularly those dependent on the context or the relationship. Personality factors or other enduring traits might influence such processes and account for some individuals being more prone to one type of decision making than to another.

Hoyle, Fejfar, and Miller (2000) recently carried out a meta-analysis of studies that related personality factors to sexual risk taking. They found 52 such studies, 75% of which had been published since 1990. All but a few studies involved heterosexual men and women. In 64% of studies, sensation seeking was one of the personality factors studied. Consistent evidence supported a relationship between sensation seeking and all the aspects of sexual risk taking covered by the meta-analysis (i.e., number of partners, unprotected sex, and high-risk sexual encounters,

such as with a stranger). More limited evidence showed a relationship with impulsivity and agreeableness. A more recent paper (Trobst, Herbst, Masters, & Costa, 2002) reported an association between high neuroticism, low conscientiousness, low agreeableness, and HIV risk behaviors.

Jaccard and Wilson (1991) and Pinkerton and Abramson (1995) have pointed out two principal limitations to this research on personality and sexual risk taking, which have to a considerable extent persisted in the more recent literature. First, the personality traits usually studied have been broad (e.g., neuroticism or impulsivity) and of much wider relevance than sexuality. Second, such traits have usually been related to specific sexual acts (e.g., whether a condom was used on the last occasion of sexual activity). They emphasized the need to focus on aspects of personality which are more specific to sexual behavior and to relate them to more enduring patterns of sexual behavior.

Use of condoms is regarded as the single most important indicator of sexual risk evasion. Sheeran, Abraham, and Orbell (1999) conducted a meta-analysis of 121 studies assessing psychosocial correlates of heterosexual condom use. Among the personality and other psychosocial predictors covered were two that were more specifically sexual and more consistent with Jaccard and Wilson's recommendations: *erotophilia-erotophobia* and the impact of sexual arousal on condom use. Erotophilia-erotophobia (Fisher, Byrne, White, & Kelley, 1988) concerns an individual's tendency to show more positive or negative attitudes and emotional reactions to sexual activity. The questionnaire measuring erotophilia-erotophobia consists of a mixture of attitudinal, emotional, and sexual response measures. In a study of male university students, Fisher (1984) showed

that this scale predicted condom use independently of the behavioral intentions of the subjects. However, several other studies (Baffi, Schroeder, Redican, & McCluskey, 1989; Raj & Pollack, 1995; Wulfert & Wan, 1993), all studying college students, found the measure to have no value in predicting condom use. Only one published study considered the impact of sexual arousal on condom use. Boldero, Moore, & Rosenthal (1992) assessed subjects' intent to use condoms in the future and then asked them to complete another questionnaire immediately after a subsequent sexual encounter, indicating their intention to use condoms immediately before the encounter, the extent to which they were sexually aroused and communicated with their partner about condom use during the encounter, and whether they actually used a condom. The degree of sexual arousal during the encounter was negatively associated with condom use, whereas intention to use condoms immediately before the encounter and communication with the partner about condom use increased the likelihood that condoms were used. The authors commented, "The fact that the majority of those changing their intention, shifted from intending to use condoms to having no thoughts of using condoms at the time of the encounter, is suggestive of the influence of arousal."

Until now, in spite of the growing evidence of personality being relevant to sexual risk taking, interventions to reduce HRSB have largely been based on the premise that, at least within any given context or situation, all individuals are likely to behave in the same way. Carey and Lewis (1999) addressed this issue. While acknowledging the relevance of personality characteristics to the motivation to change high-risk behavior, they regard them as less important than situational factors "owing to (i) the limited applicability of a personality-based intervention and (ii) the generally low predictive relationship between a personality trait and actual behavior." They go on to point out that as personality characteristics reflect genetic factors and early learning, they are not going to be easy to change.

In our opinion, there are at least four reasons why personality factors and related traits should not be ignored if interventions to reduce HRSB are to be improved.

1. Given the relative stability of relevant personality characteristics, they offer the opportunity to identify young people who are not yet engaging in high-risk sexual behavior but who are likely to do so in the future. This is well illustrated by a longitudinal study of a birth cohort followed up to their early 20s (Caspi et al., 1997). These authors found that evidence at age 3 of "undercontrolled" behavior predicted high "negative emotionality" and low "constraint" from the Tellegen personality profile (Tellegen & Waller, 1985) at age 18, which in turn predicted a range of high-risk behaviors, including sexual behavior at the age of 21. In a similar vein, Bates, Alexander, Oberlander, Dodge, and Pettit (2003) found externalizing behavioral tendencies in kindergarten-aged children to be predictive of number of sexual partners at age 16 and 17.

2. Personality characteristics are likely to be important prognostic factors or mediators in determining the response to an intervention. Such crucial sources of variance in the outcome of interventions need to be controlled to assess the interventions effectively (Warner & Bancroft, 1986). We have so far found no controlled intervention study using experimental methods that has either examined the prognostic significance of personality factors or has controlled for any such factor as a mediator.

3. Personality characteristics may determine which kind of message is going to be most effective in any intervention campaign, such as those involving the media. Donohew, Palmgren and Lorch (1994) have pointed out that high sensation seekers are likely to respond to styles of communication that would be ineffective or even counterproductive in low sensation seekers. This evidence might encourage the use of more than one type of message.

4. Personality characteristics may play a crucial role in designing appropriate one-on-one interventions. Thus, for example, interventions with individuals who have a tendency to take sexual risks when depressed or who use sex as a form of mood regulator could initially employ a behavioral analysis of the relationship between mood and sexual behavior (e.g., using daily diaries) to confront the individual with this pattern and to focus motivation for change, followed by a cognitive-behavioral approach to develop and maintain alternative methods of mood regulation.

In assessing the relevance of personality factors, we also need to consider the overlap between sexual activity and sexual risk taking; the more sexually active a person is and the more partners are involved, the greater the possibilities for taking sexual risks. Personality variables may in some cases be of more direct relevance to the level of sexual activity than to sexual risk taking per se. *Sensation seeking* is a good example. This concept, first introduced by Zuckerman in 1964, has generated an extensive literature and has been defined as "the seeking of varied, novel, complex and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (Zuckerman, 1994, p. 27). The disinhibition subscale of the Sensation Seeking Scales has 10 items, 4 of which pertain specifically to sexual behavior: "I enjoy the company of real 'swingers' (people who are uninhibited and free about sex)"; "I like to date persons who are physically exciting (rather than who share my values)"; "A person should have considerable sexual experience before marriage"; "I enjoy watching many of the 'sexy' scenes in movies." Therefore, this subscale can be seen as a measure relating to permissive sexual attitudes; this view was supported in a series of studies, mainly of students, carried out in the 1970s and late 1980s (Zuckerman, 1994). Disinhibition along with Boredom Susceptibility—another subscale of the Sensation Seeking Scale—were also shown

to be related to a "ludic love style," that is, a more playful, less committed type of love with more autonomy for partners (Richardson, Medvin, & Hammock, 1988).

In the theoretical model that guides our research (Bancroft, 2000), we make the distinction between *risk appraisal*, which is the focus of most of the existing models (how much risk does this type of situation involve?), and *risk management* (how is the risk actually dealt with when the time comes?). Although in real terms there is an overlap between these two processes (e.g., intention to use a condom results from risk appraisal), we believe that the distinction is conceptually useful, as risk management focuses attention on both situational factors and personality traits of the individual that influence his or her state of mind at the time when the risk is either taken or avoided (e.g., intention is or is not translated into behavior). The report of the National Institute of Mental Health (NIMH) Theorists' Workshop (Fishbein et al., 1991) concluded that no one performs a given behavior unless the advantages are seen to outweigh the disadvantages. By *risk management* we mean the implementation of this tradeoff process, and how it is affected by the state of mind at the time.

In the study reported here, we focused on four potentially important mediating factors that contribute to this state of mind: (a) sexual arousal, (b) mood, (c) sensation seeking, and (d) assertiveness in the sexual relationship.

SEXUAL AROUSAL

When interpreting their results, Boldero et al. (1992) concluded, "In a sexual encounter when arousal is high, the encounter alone becomes the focus and the associated task of condom use receives little or no attention." While we agree with this interpretation, we also believe there is a need to allow for individual variability in this respect, otherwise it is difficult to see how anyone would use condoms during sexually arousing encounters. Our theoretical dual control model postulates individual variability in the propensity for sexual excitation as well as inhibition of sexual response in the face of a threat or risk (Bancroft, 1999; Bancroft & Janssen, 2000). Inhibition of sexual response is for most people an adaptive mechanism that would impair sexual arousal if suitable precautions were not being taken. Such individuals, therefore, remain sexually aroused specifically because they use a condom in an otherwise risky situation. Individuals with low propensity for sexual inhibition remain aroused in the presence of risk and, as a consequence, are less likely to take appropriate risk-reducing action (e.g., wear a condom). We have developed a psychometrically well-validated instrument for measuring propensity for sexual inhibition and sexual excitation (SIS and SES, respectively; Janssen, Vorst, Finn, & Bancroft, 2002a, 2002b). This instrument consists of one scale for measuring propensity for sexual arousal or excitation (SES) and two scales related to inhibition: SIS1, or inhibition due to threat of performance failure, and SIS2, or inhibition due to threat of performance consequences. SIS1 is most relevant to sexual dysfunction; SIS2, which covers such consequences as STD, unwanted pregnancy, social embarrassment, or legal consequences, is most directly relevant to sexual risk taking (see Materials section for further details). This instrument specifically focuses on sexual arousability and what enhances and inhibits it, and hence is directly relevant to our theoretical model. This contrasts with other established questionnaires, such as the Sexual Opinion Survey, measuring erotophobia and erotophilia (Fisher et al., 1988), which assess mixtures of attitudes, physiological responses, and behaviors.

In our study of gay men (Bancroft, Janssen, Strong, Carnes, et al., 2003a), we found that low SIS2 scores predicted sexual risk taking in terms of unprotected anal intercourse (UAI) and oral sex. Interestingly, we found that high SIS1 was also predictive of UAI as well as number of casual partners, suggesting that lack of confidence in one's ability to achieve an erection may reduce an individual's likelihood of using a condom, and may, at least for gay men, increase the likelihood of having more one-time partners. SES, our measure of sexual excitation proneness, strongly predicted number of sexual partners for gay men.

MOOD

In conventional wisdom, it is assumed that sexual interest and, to some extent, sexual responsiveness go down in states of negative mood such as depression or anxiety. Whereas this is probably true for the majority, we have shown with both heterosexual (Bancroft, Janssen, Strong, Carnes, et al., 2003b) and gay men (Bancroft, Janssen, Strong, & Vukadinovic, 2003) that a substantial minority of men experience an increase in sexual interest and responsiveness when in negative mood states, a pattern which is more likely to be reported by younger men. We are therefore dealing with a variable pattern of mood-sexuality relationship which can be regarded as an age-related personality trait. We have developed a simple instrument, the Mood & Sexuality Questionnaire (MSQ; see Materials section for more details) for measuring this trait. In addition, we considered whether a tendency to experience negative mood per se may influence sexual risk taking, and for that purpose we used trait measures for depression (Zemore Depression Proneness Ratings [ZDPR]; Zemore, Fischer, Garratt, & Miller, 1990) and anxiety (Spielberger Trait Anxiety Inventory [STAI]; Spielberger, Gorsuch, & Lushene, 1970).

In our study of sexual risk taking in gay men (Bancroft, Janssen, Strong, Carnes, et al., 2003a), we found that our trait measure of anxiety (STAI; see Materials for further details) was negatively related to UAI and unprotected oral sex. More striking, however, was a strong association between increased sexuality in negative mood states, as measured by our MSQ, and higher numbers of casual partners or more frequent cruising behavior.

SENSATION SEEKING

The reasons for considering this trait have been discussed above. In our study of gay men (Bancroft, Janssen, Strong,

Carnes, et al., 2003a), we found that the disinhibition subscale of Zuckerman's Sensation Seeking Scale was a predictor of all our risk categories.

SEXUAL ASSERTIVENESS

The intention to use a condom or to otherwise avoid sexual risk is likely to require appropriate assertiveness or control in the sexual interaction. Although this may well depend on the particular dyadic interaction, personality attributes of each individual are likely to be relevant.

The nature of the sexual relationship is clearly important. There is increasing evidence that a substantial amount of transmission of STIs occurs within regular relationships (e.g., Evans, Bond, & MacRae, 1997) and that men and women are much more likely to use condoms with nonregular than with regular partners. For example, in the meta-analysis by Sheeran et al. (1999), 17% of participants always used a condom with a steady partner compared to 30% with a casual partner, and 52% of those with steady partners never used condoms compared to 40% of responders with casual partners. It is reasonable to assume that people in steady relationships perceive less risk in those relationships, however misguided that may be, and in addition may see the use of condoms as a challenge or threat to the committed nature of the relationship. However, whereas unprotected sexual activity within regular relationships has to be considered an important source of transmission of STIs, it is in a different category of risk taking when compared to exposure to infection in casual relationships or with multiple partners. In this paper, it was the latter category of risk that concerned us, and our principal indicators of sexual risk involved numbers of partners, number of partners with whom no condom was used, and number of casual partners. We do report limited evidence relating our personality factors to whether one is in a monogamous relationship or not. However, identifying factors that influence whether condoms are used regularly in an established monogamous relationship will require a different approach and probably different personality traits to be measured.

As discussed earlier, we need to consider the extent to which our personality factors of interest are more directly relevant to sexual activity, with sexual risk being a secondary consequence. For that reason, we included subjects who currently are not sexually active or who have only engaged in sexual activity that does not involve vaginal or anal intercourse.

METHOD

Participants

Eight hundred and seventy-nine men who self-identified as heterosexual filled out our questionnaires. The mean age was 25.2 years ($SD = 9.3$; range = 18-81). Approximately 70% were White, almost 24% were Black or African American, 1.6% were Hispanic, 1.6% were Asian, and the remaining 3% were of another ethnicity. Over three quarters of the sample were single or never

married, about 10% were married, 7% were divorced or separated, and 6% were living with a partner. Current relationship status was reported as "exclusive/monogamous" for 41%, "non-exclusive/non-monogamous" for 16.7%, and "not in a sexual relationship" for 35.8% (6.5% did not answer this question). Subjects had completed a mean of 13.8 years of education ($SD = 3.1$). More than half of the subjects (65.6%) were currently attending college, 85% had attended college at some point, and 90% had completed high school. Approximately 35% were employed full-time, 25% part-time, 25% were unemployed, and 14% were temporary or seasonal workers. Approximately 65% were in the middle income range (lower-middle, 18.8%; middle, 31.0%; upper-middle, 15.6%), 23% were at the lower income level, 10% were at poverty level, and less than 2% were at the upper income level.

Recruitment was carried out at a variety of sites designed to provide a range of risk taking behaviors. Sites included STD clinics (32.7% of cases), clubs and singles bars (19%), student recruitment in university departments (34.4%), and various others (13.9%). Subjects were asked to complete a set of anonymous questionnaires for which they received payment of $10. We obtained approval from Indiana University Bloomington Human Subjects Committee.

Materials

Assessment of Sexual Activity and Risk Taking

Two questionnaires were used for this purpose.

Kinsey Institute Sexual Activity and Condom Use Questionnaire (Bancroft, Janssen, Strong, Carnes, et al., 2003a). This covers (a) sexual activity with women over the past 6 months (these questions were used to categorize subjects according to recent sexual activity) and (b) information about HIV testing and serostatus and past history of other STIs.

Demographic and Sexual History Questionnaire (DSHQ). This covers basic demographic information, current health problems and use of medications, sexual orientation, relationship status, and questions about erectile and ejaculatory problems in the past 3 months and "ever" (categories rated as "never," "occasionally," "less than half the time," and "most of the time"), as well as frequency of various types of sexual activity.

Included in the DSHQ were the following 3 questions, each of which was used as a separate measure of sexual risk taking:

1. With how many different partners have you had sex (sexual intercourse) in the past year?

2. With how many different partners have you had sex (sexual intercourse) during the past three years with whom no condoms were used?

3. With how many different partners have you had sex (sexual intercourse) on one and only one occasion in your lifetime ("one night stands")?

Questions 1 and 3 were taken from the widely used

Socio-sexual Orientation Inventory (SOI; Simpson & Gangestad, 1991) and question 2 from a modification of the SOI (Seal & Agostinelli, 1994) used to assess the relationship between sexual risk taking and personality factors such as impulsivity. The different time periods covered by questions 1 and 3 were retained to allow direct comparison with other studies using those questions.

Assessment of Personality Traits

We used the following questionnaires.

Sexual Inhibition/Sexual Excitation Scales (SIS/SES; Janssen et al., 2002a, 2002b). This recently developed questionnaire measures, with 45 items, three factors: (a) propensity for sexual excitation (SES; range = 20–80); (b) propensity for sexual inhibition due to the threat of performance failure (SIS1; range = 14–56); and (c) propensity for sexual inhibition due to the threat of performance consequences (SIS2; range = 11–44). Cronbach alphas for the three scales are .88, .83, and .66 respectively. Scores on each of these scales are close to normally distributed in the approximately 2,500 men we have so far tested. The scales have good discriminatory validity with only modest overlap with measures of global traits of behavioral inhibition, harm avoidance, and reward responsivity. Typical items include the following: for SES, "When an attractive person flirts with me, I easily become sexually aroused"; for SIS1, "When I have a distracting thought, I easily lose my erection"; for SIS2, "If I realize that there is a risk of catching a sexually transmitted disease, I am unlikely to stay aroused." The response for each item ranges from 1 = *strongly agree* to 4 = *strongly disagree*.

The Mood and Sexuality Questionnaire (MSQ; Bancroft, Janssen, Strong, Carnes, et al., 2003b; Bancroft, Janssen, Strong, & Vukadinovic, 2003). This recently developed instrument is a trait measure, asking respondents to indicate what typically happens to (a) sexual interest and (b) erectile responsiveness when they are depressed (MS-1 and -2) and when they are anxious or stressed (MS-3 and -4; e.g., "When you have felt depressed what typically happens to your sexual interest/response?"). A bipolar scale is used for each item, with 5 indicating no change, 1 marked reduction, and 9 marked increase. The range for each individual item is, therefore, 1 to 9, and for the sum score (MS-total) of the four scales, 4 to 36 (Cronbach alpha .85). For each mood state the questionnaire offers a box to check if the participant "has never been depressed (or anxious) enough to find out." Participants checking this box are excluded from analyses involving this variable.

Sensation Seeking Scales (Form V; Zuckerman, 1979, 1994). This long-established and widely used instrument has a total of 40 items, each having two possible choices. There are four subscales—thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility—as well as a total score. Each of the four subscales has 10 items scored 1 or 0; hence each subscale has a range of 0 to 10. The total score consists of all 40 items, with a range of 0 to 40. The two subscales of most relevance to sexual risk taking, disinhibition and boredom susceptibility, together with SSS-total scores, were used in analyses for this paper.

Zemore Depression Proneness Ratings (ZDPR; Zemore et al., 1990). This is a trait measure of propensity for depression in terms of frequency and severity. We used the 13-item version. All questions start by asking "Compared to most people you know…." Three questions then ask (a) "how often do you get depressed?" (b) "how long do your depressions last?" and (c) "how deeply depressed do you become?" Ten further questions ask how often the participant experiences a variety of depressive symptoms (e.g., discouragement about the future, feeling guilty or unworthy). Each question is answered on a bipolar scale from 1 (e.g., *much less*) to 9 (e.g., *much more*), with 5 indicating the same "as others you know." The range of scores on this measure is therefore 13 to 117.

Although not much used in the literature, the ZDPR was the only psychometrically established trait measure of depression we found. Zemore et al. (1990) reported on the reliability and validity of this measure. Factor analysis showed a single factor structure accounting for 44% of the variance, with a Cronbach alpha coefficient of .90. Test-retest reliability after 9 weeks was shown in a correlation of .82 ($n = 98$), with substantially greater stability than a state measure, the Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988), administered on the same two occasions. The ZDPR was also found to be a significantly better predictor of past history of depression than the BDI.

Spielberger Trait Anxiety Inventory (STAI; Spielberger et al., 1970). This is a widely used trait measure for anxiety, which has twenty items (e.g., "I worry too much over something that doesn't matter"; "I am calm, cool and collected"), each with four response options from *strongly agree* to *strongly disagree*. The range of scores is therefore 20 (low anxiety) to 80 (high anxiety).

Sexual Awareness Questionnaire (SAQ; Snell, Fisher, & Miller, 1991). This 36-item questionnaire provides scores on four subscales: sexual consciousness, sexual monitoring, sexual assertiveness, and sex-appeal consciousness. Items are rated on a 5-point scale from *not at all characteristic of me* to *very characteristic of me*. This was the only established instrument that we could find to measure sexual assertiveness. Its factor structure was established on a relatively small sample of both men and women (predominantly women). Having collected our data using this questionnaire, we found that we were unable to confirm the authors' original factor structure, particularly the sexual assertiveness scale. We are therefore not reporting the main results from this instrument, but are reporting the results of two items from the SAQ that did not enter any of their four scales: "If I wanted to practice 'safe sex' with someone, I would insist on doing so" and "I would ask about STDs before having sex with someone." We have combined these two questions to provide a rating of "safer sex assertiveness" (SSA). The correlation between these

two items was $r = .369$. This combined variable is more an assessment of behavioral intention than a personality trait.

Analysis

We carried out univariate comparison of sexual activity or risk categories using analysis of variance for parametric and Kruskal-Wallis or chi-square test for nonparametric variables. To explore the relationship between our trait measures and sexual activity groups, we used multinomial logit modeling (MNLM; Long, 1997). For multivariate analysis to assess the relationship between our trait measures and risk taking, we used negative binomial regression, with the counts for each of the three risk questions used as dependent variables (Long, 1997). We used multiple linear regression to assess the relations between our trait variables and our measure of "safer sex assertiveness," and binary logistic regression to assess the relations between the trait variables and being currently in a monogamous relationship (Long, 1997).

In our results, the ns varied for a number of reasons. Participants varied in (a) whether they completed all items in each questionnaire and (b) which items they did not complete. In multivariate analyses, the n depended on the variable with the lowest n; for example, in analyses involving MS-1, all participants who indicated that they had not been depressed enough to recognize a typical relationship between depression and sexuality were excluded ($n = 345$). With other trait measures, the number of subjects with missing data was much smaller ($n = 52$). In some of the analyses using negative binomial regression, participants who were in an exclusive, monogamous relationship (and reported only one partner in the past 6 months) were excluded ($n = 230$) for reasons given in the results section. There was also overlap across these excluded groups (e.g., some of the monogamous relationship group were MSQ excluders, etc.).

RESULTS

Sexual Activity During Past Six Months

Based on sexual activity with women over the last 6 months, participants were divided into three groups: Group A, no sexual activity with a partner ($n = 101$); Group B, sexual activity not involving vaginal or anal intercourse ($n = 91$); and Group C, sexual activity including vaginal or anal intercourse ($n = 673$). We excluded 14 participants because of missing data.

The comparison of these three sexual activity groups for our personality trait measures was first assessed univariately. Group B, those who were sexually active but not engaging in vaginal or anal intercourse, were, not surprisingly, significantly younger than the other two groups (Group A = 25.1 ± 10.8; Group B = 21.7 ± 7.9; Group C = 25.7 ± 9.1; $p = .001$; $n = 858$). The main discriminator among the trait measures was disinhibition, highest in Group C (Group A = 4.8 ± 2.7; Group B = 5.6 ± 2.4; Group C = 6.1 ± 2.5; $p < .001$; $n = 847$). A similar pattern was shown for total SSS

(Group A = 20.5 ± 6.4; Group B = 22.2 ± 5.7; Group C = 23.4 ± 6.4; $p < .001$; $n = 847$). Weaker but significant discrimination was shown by SIS2 (Group A = 28.4 ± 3.8; Group B = 27.8 ± 3.9; Group C = 27.2 ± 4.5; $p < .05$; $n = 865$) and SIS1 (Group A = 29.6 ± 5.0; Group B = 29.1 ± 5.2; Group C = 28.0 ± 5.8; $p < .05$; $n = 865$). Neither of the trait measures relating to mood (STAI and ZDPR) nor any of the MSQ scales differed between groups.

MNLM was then used to assess the effects of each trait measure and age while controlling for all the others. Those variables that were significant in the univariate analyses presented above were included in the models ($n = 827$). These analyses confirmed that each group was significantly different in age, although the difference between Groups A and C was only just significant ($p = .048$). For Disinhibition, Group C was significantly higher than both the other two groups (Group A vs. Group C, $p < .001$; Group B vs. Group C, $p = .004$), which were not significantly different from each other. SIS1 was significantly higher in Group A than in Group C, $p = .02$.

Sexual Risk Taking

Our three markers of sexual risk taking were (a) the number of different sexual partners in the last year (median = 1, range = 0-100[1]), (b) the number of different partners with whom the respondent had sex without a condom during the last three years (median = 1, range = 0-46), and (c) the number of one night stands in the respondent's lifetime (median = 2, range = 0-450). To assess the broader risk relevance of these three markers and hence to validate their use as sexual risk markers, we explored their relation to other factors relevant to sexual risk taking—alcohol and drug use and previous STIs—using correlations, t tests, or analysis of variance, as appropriate.

Number of partners in the past year showed a low but significant correlation with number of alcoholic drinks per week, $r = .087$, $p = .011$. The number of partners was significantly higher in those reporting use of recreational drugs ($p < .001$) and in those reporting an STI within the past 6 months ($p < .001$). The number of partners in the past year was also higher in those with a lifetime history of gonorrhea ($p = .001$) and chlamydia ($p < .001$). This was not the case with syphilis (with which only 18 had a past history) or nonspecific urethritis (NSU).

The picture was similar for number of partners over the past 3 years with whom no condom was used. The correlation with number of alcoholic drinks was somewhat larger ($r = .162$, $p < .001$) and there was a significant association with past history of NSU; otherwise there was little difference.

Controlling for age, lifetime number of one night stands was not related to alcohol or recreational drug use, but was related to history of chlamydia ($p = .002$) and NSU ($p = .005$)[2].

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[1] One person who reported 204 partners was recoded to 100.
[2] There was also a significant interaction between age and history of NSU in predicting number of one night stands ($p = .008$).

To explore the relevance of our trait measures to the three markers of sexual risk, we used count models to examine the effects of age, SIS/SES, disinhibition, boredom susceptibility, ZDPR, STAI, and MSQ. We report only MS-1 (from the four MSQ subscales) as this showed the most consistent as well as significant relations to the dependent variables. We also ran initial models with SSS-total instead of disinhibition and boredom susceptibility. As SSS-total made little difference, we have only reported on the two individual subscales. Our measure of safer sex assertiveness (SSA) was not included in these models and is reported on separately. For each outcome, we estimated the negative binomial regression model (Cameron & Trivedi, 1998; Long, 1997). This nonlinear model estimates the effects of independent variables on the expected number of partners in each marker. The transformed coefficients can be interpreted as the percentage change in the number of partners for a given change in a variable, holding all other variables constant.[3] While the specified periods of time for Markers 1 and 2 (1 and 3 years) were the same for all respondents, the period of time for Marker 3, the lifetime number of one night stands, would clearly be dependent on age. Accordingly, for this marker we statistically adjusted for years of sexual activity using standard methods of exposure adjustment (Cameron & Trivedi, 1998, p. 81). Having thus adjusted, we were able to examine the effects of age per se on the number of one night stands (i.e., determine if a younger was man likely to have more than an older man).

In the initial analysis of our first marker—number of partners in the past year—we found that 34.7% of the respondents reported one sexual partner. This was a substantially larger percent than for any other number of partners, but is consistent with the fact that 28.7% of respondents described themselves as currently being in a monogamous relationship and only reported one partner in the past 6 months (12.3% describing themselves as currently in an "exclusive/monogamous" relationship also reported more than one partner in the past 6 months; they were excluded from the monogamous category). Including the monogamous respondents in the model resulted in a substantial underprediction of the number of participants with only one partner. For that reason, those respondents were excluded from the final analysis, improving the predicted number substantially. Similarly, for our second marker—number of partners in the past 3 years with whom no condom was used—28% reported one partner. For the same reason as with our first marker, those currently in a monogamous relationship were excluded, even though this is an imperfect measure of monogamy over the past 3 years.

Table 1 presents the results of the negative binomial regression for the first marker (the number of partners during

Table 1. Number of Different Sexual Partners in the Last Year ($n = 304^a$)

Trait[b]	b	z	p	% Std X	SD of X
Age	0.010	1.15	ns	8.4	7.7
SES	0.001	0.01	ns	0	7.8
SIS1	0.002	0.13	ns	0.8	5.3
SIS2	-0.015	-1.01	ns	-6.1	4.2
STAI	0.003	0.26	ns	2.0	7.8
ZDPR	-0.003	-0.58	ns	-4.4	18.0
DISIN.	0.093	3.10	0.002	26.2	2.5
BS	0.035	1.03	ns	7.1	2.0
MS-1	0.082	2.51	0.01	15.8	1.8
Alpha	0.6933				

Note. b = raw coefficient; z = z test of b = 0; p = p value; % Std X = percentage change in expected count for standard deviation increase; SD = standard deviation of independent variable. The *LR* test of alpha is the likelihood ratio test of overdispersion in the negative binomial regression model. Two cases were dropped since the number of reported partners was 50 or larger.
[a]Excluding those currently in monogamous relationship or with missing data. [b]Trait variables: SES = Sexual Excitation Scale; SIS1 = inhibition due to threat of performance failure; SIS2 = inhibition due to threat of performance consequences; STAI = Speilberger Trait Anxiety Measure; ZDPR = Zemore Depression Proneness Rating; DISIN = disinhibition subscale; BS = boredom susceptibility subscale of Sensation Seeking Scales; MS-1 = sexual interest when depressed, subscale of MSQ.

the last year), excluding those currently in a monogamous relationship. Two variables had significant effects on this outcome. For one standard deviation (*SD*) increase in the disinhibition score (about 2.5 points), the expected number of partners increased by 26%, holding other variables constant. For one *SD* increase in MS-1 (sexual interest when depressed, about 1.8 points), the expected number of partners increased by 16%.

Table 2 shows the results for our second marker (the number of different partners during the last three years with whom no condom was used) excluding those currently in a monogamous relationship. We found four significant predictors; for one *SD* increase in age (about 7.7 years), the expected number of partners increased by 37%, holding other variables constant. For one *SD* increase in SIS2, the expected number of partners decreased 18%. Our two trait measures for mood disorders, ZDPR and STAI, were both predictive, but in opposite directions. One *SD* increase in ZDPR (propensity for depression) decreased the expected number of partners by 24%, whereas for one *SD* increase in STAI (trait measure for anxiety), there was a 24% increase. As MS-1 was not a significant predictor in this model, we ran the analysis omitting MS-1 and thereby increased the *n* substantially (i.e., the number of "excluders" for this variable). This produced no changes in the overall model worthy of note.

The analysis of our third risk marker (the number of lifetime one night stands) did not exclude those currently in a monogamous relationship for obvious reasons. However, since older respondents are likely to have had more years of sexual activity than younger respondents, we made an exposure adjustment based on the assumption

Table 2. Number of Different Sexual Partners in the Last 3 Years With Whom no Condom was Used ($n = 304^a$)

Trait[b]	b	z	p	% Std X[c]
Age	0.040	3.50	< 0.001	36.6
SES	0.003	0.33	ns	2.4
SIS1	0.004	0.28	ns	2.1
SIS2	-0.049	-2.66	0.008	-18.2
STAI	0.028	2.36	0.018	24.3
ZDPR	-0.016	-2.90	0.004	-24.3
DIS	0.062	1.76	0.08	16.8
BS	0.036	0.94	ns	7.3
MS-1	0.019	0.46	ns	3.4

Note. b = raw coefficient; z = z test of $b = 0$; p = p value; % Std X = percentage change in expected count for standard deviation increase. The LR test of alpha is the likelihood ratio test of overdispersion in the negative binomial regression model. [a]Excludes those currently in monogamous relationship or with missing data. [b]For description of each trait variable see Table 1. [c]For *SD* of each variable see Table 1.

that individuals became sexually active at age 14. (Analyses were also run with assumed age of onset of sexual activity ranging from 12 to 18 years, with little difference in the results.) Table 3 presents the estimates from our model. There were two significant predictors. For one *SD* increase in SIS2, the expected number of partners per year was estimated to decrease by 21%, holding all other variables constant. One *SD* increase in MS-1 increased the expected number by 16.5%.

Safer Sex Assertiveness

This variable, taken from the Sexual Awareness Questionnaire (Snell et al., 1991), is based on two items: "If I wanted to practice 'safe sex' with someone, I would insist on doing so," and "I would ask about STDs before having sex with someone." Given that it is less a personality trait and more an indicator of behavioral intentions, albeit intentions highly relevant to sexual risk taking, we explored this variable separately. We first assessed the effect of adding it as an

Table 3. Number of One Night Stands Over Lifetime ($n = 465^a$)

Trait[c]	b	z	p	% Std X	SD of X
Age	-0.005	-0.58	ns	-4.6	9.29
SES	0.003	0.34	ns	2.1	8.19
SIS1	0.023	1.78	0.08	13.7	5.50
SIS2	-0.056	-3.25	0.001	-21.2	4.28
STAI	0.011	0.98	ns	8.9	7.79
ZDPR	0.001	0.23	ns	2.0	17.67
DIS	0.046	1.39	ns	12.4	2.53
BS	0.026	0.66	ns	5.4	1.98
MS-1	0.083	2.34	0.02	16.5	1.84

Note. b = raw coefficient; z = z test of $b = 0$; p = p value; % Std X = percentage change in expected count for standard deviation increase; *SD* = standard deviation of independent variable. The *LR* test of alpha is the likelihood ratio test of over-dispersion in the negative binomial regression model. To adjust lifetime partners for the number of years a respondent was sexually active, we assumed that sexual activity began at 14. [a]Excluding those with counts of 130 or more ($n = 2$) and those with missing data. [b]For description of each trait variable see Table 1.

independent variable to the three negative binomial regressions reported above. This showed it to be a strong negative predictor of number of partners in the past year ($p = 0.008$) and number of partners in the past 3 years with whom no condoms were used ($p < .001$). In each case, its addition did not alter the rest of the model substantially, but in the first model (predicting partners in the past year), it increased the significance of MS-1 and reduced the significance of disinhibition. In the second model (partners without condoms in the past 3 years), it reduced the significance of age, SIS2, STAI, and ZDPR, although all remained significant. It thus seemed likely that the impact of this variable was mediated by its relationships with other independent variables, and we explored this finding with multiple linear regression, taking the SSA as the continuous dependent variable and our trait measures and age as independent variables. The results are shown in Table 4: SIS1 (negative) and SIS2 (positive) were the strongest predictors, with SES, STAI (negative), and disinhibition (negative) also significant.

Involvement in a Monogamous Relationship

Although exploring personality factors relevant to relationship status was not one of the original objectives of this study, participating in a monogamous relationship is clearly relevant to sexual risk taking. In some of the analyses above we excluded those who were currently in a monogamous relationship for statistical reasons. However, as indicated in the introduction, there are other reasons for considering sexual risk taking in such relationships differently. We therefore used binary logistic regression to assess the extent to which we could predict monogamous relationship status using our trait variables and age. Only two variables were significant predictors. One *SD* increase in age increased the likelihood of being in a monogamous relationship by 33.3% ($p = .01$). One *SD* increase in MS-1 decreased the likelihood of being in a monogamous relationship by 23.8% ($p = .023$).

DISCUSSION

Sexual Activity

Comparison of our three sexual activity groups (A, B, and C) found a predictable relation to age. Those who were

Table 4. Relationship Between Personality Trait Measures and Safer Sex Assertiveness Using Multiple Linear Regression ($n = 473$)

Trait[a]	beta	t	p
SES	.026	2.27	.02
SIS1	-.073	-3.91	< .001
SIS2	.086	3.51	< .001
STAI	-.041	-2.51	.01
ZDPR	.005	0.73	ns
DIS	-.086	-2.00	.046
BS	-.050	-0.97	ns
MS-1	.048	0.95	ns
Age	-.002	-0.20	ns

[a]For description of each trait variable see Table 1.

engaging in sex not involving vaginal intercourse were, not surprisingly, younger. Those who were engaging in vaginal intercourse ranked higher on the disinhibition scale, a finding consistent with this scale being a measure of sexual permissiveness of broader relevance than sexual risk taking.

Group A, who were close in age to Group C but sexually inactive in the past 6 months, were higher on SIS1. This raises the possibility that a sense of vulnerability about one's erectile function, which is reflected in the SIS1 score (Bancroft & Janssen, 2000), discourages some heterosexual men from engaging in sexual activity with a partner. SIS1 was not predictive of any of our risk measures. However, in our study of gay men (Bancroft, Janssen, Strong, Carnes, et al., 2003a), high SIS1 was predictive of sexual risk taking. We interpreted that finding as suggesting either a reluctance to use a condom because of fear of losing an erection, or greater likelihood of being the recipient in anal intercourse, for which a full erection is not necessary. This apparent difference between straight and gay men warrants further study.

Sexual Risk Taking

Our three markers of sexual risk are simple and limited. The issue of recall error should be considered. The accuracy of an estimate of number of partners or number of partners with whom no condom was used would be greater for a shorter time period. On the other hand, as discussed in the beginning of this paper, the relevance of personality-type traits as used in this study is likely to be greater with more enduring patterns of behavior. The specific questions used in the analyses therefore reflect this balance, as well as having the advantage of being used in other studies, thereby allowing cross-study comparison. The differences between the three markers warrant discussion. The number of sexual partners in the past year covers those who have been in a monogamous relationship (whom we excluded from the analysis of this variable), those who have been moving from one relationship to another (which may not involve sexual risk taking), and those who engage in sex with more than one partner. Such sex may be relatively safe if condoms are always used, but does expose the subject to a range of risks beyond sexually transmitted disease or unwanted pregnancy. Number of partners with whom no condom was used is more specifically related to STD and pregnancy risk. Although this variable does not assess the frequency of unprotected sex, the higher the number of such partners, the greater the risk. Number of one night stands does not necessarily indicate high risk, but it does indicate the extent to which the individual has extended his or her sexual activity beyond ongoing sexual relationships. In addition, each one night stand presents a unique challenge to the individual in terms of risk management, and not just in terms of STIs.

The risk relevance of our first two markers was supported by their relatedness to alcohol and drug use and STI history. Interestingly, our third marker, lifetime number of one night stands, was less clearly related to these other risk indicators, but did show a relationship to the two most common STIs, chlamydia and NSU.

We now consider our ability to predict our three markers of sexual risk taking, taking each personality trait separately and making direct comparison with our study of gay men. This analysis should be treated cautiously; our gay sample was substantially older (mean age 35.7 years), and some of our trait measures (e.g., MSQ) are age related. Also, the determinants of our three risk markers may not be the same in straight and gay men. In the gay study (Bancroft, Janssen, Strong, Carnes, et al., 2003a), we had more in depth assessment of sexual risk, focusing on the past 6 months. Using these more recent risk markers resulted in two clear patterns: unprotected sexual activity (anal intercourse and oral sex) was associated with low SIS2 scores, whereas number of casual partners and frequency of cruising behavior (i.e., how you make contact with sexual partners) was associated with high MS-1 scores; all four risk markers were associated with high disinhibition scores. In addition, the same three questions used in the present study were used, but these were combined to form a composite "long-term risk" score, which was divided into categories. On that basis, SIS2 and disinhibition were strong predictors of long-term risk, with SES and MS-total marginally significant. We have reanalyzed this long-term data from the gay men,[4] taking the three questions separately and excluding participants in monogamous relationships to allow more direct comparison to the present study in the following discussion.

Sexual Excitation and Inhibition

SIS2, our measure of inhibition of sexual arousal in the face of threat or risk, was strongly and negatively predictive of number of partners with whom no condoms were used in the past 3 years. This effect was also observed in the gay men, though less strongly ($p = .04$). In both cases, the results were consistent with the idea that sexual arousal that persists in the face of risk impairs risk management. SIS2 was also strongly and negatively predictive of lifetime number of one night stands. This variable was not significant with the gay men. This raises the possibility that one night stands may have different significance and determinants in straight and gay men. In the culture of men who have sex with men, relatively impersonal one-time sexual encounters are common, and there is no direct counterpart, at least of the same extent, in the culture of straight men. It is possible, for example, that the ability to be sexually aroused in these unfamiliar circumstances (i.e., consistent with a relatively low SIS2 score) is more crucial for the straight than the gay man.

SES, our measure of sexual arousability, did not predict any of the three markers; however, with the gay men, it was strongly predictive of the number of partners in the

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[4] These analyses were not included in the publication (Bancroft, Janssen, Strong, Carnes, et al., 2003a), but are available on request.

past year ($p = .003$) but not of the other two markers. This may reflect the greater opportunities for acting on one's sexual arousal for a gay man.

The fact that SIS2 and not SES was involved in the overlap between activity and risk taking in the present study suggests that the relevant mediation is not simply a matter of sexual arousability, but also of the likelihood of inhibiting sexual arousal, and hence behavior, in certain situations. Thus, individuals who are less likely to inhibit their sexual arousal are more likely to be sexually active with other people, as well as more likely to take sexual risks.

Mood and Sexuality

Our measure of sexual interest in states of depression, MS-1, was a significant predictor of both Marker 1 (number of sexual partners in the past year) and Marker 3 (number of lifetime one night stands), but did not predict Marker 2 (number of partners with no condom use). This is consistent with our findings in gay men for Markers 1 and 3, where the effects were more significant ($p < .001$ and $.003$ respectively), but gay men also showed an effect for Marker 2 ($p < .001$). In both studies, therefore, we found evidence that men who report an increased interest in sex when depressed also report a greater number of sexual partners, consistent with the idea that the seeking out of sexual partners is part of a mood-regulating pattern. For most people this would not apply, as their interest in sex typically goes down when depressed. Our findings in this study also raise the possibility of another explanatory mechanism; those with higher MS-1 scores were less likely to be in a monogamous relationship. It may be possible that this paradoxical relation between depressed mood and sexuality is a barrier to establishing intimate sexual relationships and, therefore, indirectly leads to a greater number of partners. Both of these explanatory mechanisms warrant closer study.

Our trait measures of depression (ZDPR) and anxiety (STAI), which do not relate specifically to the effects on sexuality as does our MSQ, present us with some puzzling results. Both were strongly predictive of number of partners with no condom use, but in opposite directions; those with high propensity for depression (ZDPR) reported fewer and those with high propensity for anxiety (STAI) reported more partners with whom no condom was used, the percentage change being almost identical in each case. We did not find these effects in gay men, and are not able to explain this discrepancy. This is another issue requiring further study.

Sensation Seeking

Of the two sensation seeking subscales, only disinhibition was a significant predictor, and only for the first marker (number of sexual partners in the past year). However, as discussed earlier, disinhibition did discriminate among our sexual activity groups, suggesting that this trait may be of wider sexual relevance than risk taking. In our study of gay

men, where we did not have enough sexually inactive participants to assess the relation to sexual activity per se, disinhibition was a clear predictor of all three markers of risk (Marker 1, $p = .005$; Marker 2, $p = .002$; Marker 3, $p = .001$) as well as all four of the "recent risk" categorizations (Bancroft, Janssen, Strong, Carnes, et al., 2003a). Because of the predominance of questions concerning sexual behavior and attitudes in this subscale, it is difficult to assess how relevant this finding is to disinhibition in a more general, nonsexual sense.[5] Future research in this area that focuses on sensation seeking as a more basic personality characteristic may be improved by using the Impulsive Sensation Seeking Scale (part of the Zuckerman-Kuhlman Personality Questionnaire; Zuckerman, 2002).

Safer Sex Assertiveness

This variable, based on two questions, was strongly predictive of number of partners in the past year and also number of partners in the past 3 years without condoms; it was only marginally significant for number of one night stands. This variable, which can be regarded as a measure of intention to practice safer sex as well as assertiveness in implementing that intention, appears to be relevant to more than condom use. The fact that respondents scoring high on this measure reported fewer sexual partners suggests sexual attitudes, which relate to more than safe sex. The associations between this variable and our personality trait measures, however, are of considerable interest. The fact that SIS1 and SIS2, strongly but in opposite directions, and SES less strongly, predicted this measure raises the possibility that behavioral intentions of the kind that feature greatly in interventions to reduce HRSB may themselves be reflective of the propensities for sexual inhibition and excitation that we have been considering in this paper. Thus, SIS1 (inhibition due to the threat of performance failure), which is strongly related to erectile problems, may in the negative association with safer sex assertiveness indicate that confidence in ones' erectile response is important for asserting safer sex. In contrast, SIS2 (inhibition due to the threat of performance consequences), may in its positive association with safer sex assertiveness indicate that those who are likely to lose arousal in the face of risk find it easier to insist on safer sex. STAI, the measure of propensity for anxiety, was also predictive in a negative direction; that is, the higher the propensity for anxiety the lower the safer sex assertiveness. Put together with the SIS and SES findings, this association with STAI is consistent with the idea that confidence in one's capacity for sexual response is necessary for a clear determination to practice safer sex, perhaps particularly condom use. Interestingly, disinhibition was only marginally predictive of safer sex assertiveness.

In our study of gay men we identified two patterns: the association between high MS-1 and higher number of

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[5] This confounding of the disinhibition concept with sexual behavioral variables has been considerably amplified in the recently developed Sexual Sensation Seeking Scale (Kalichman & Rompa, 1995).

casual partners (i.e., the pattern of connecting with sexual partners), and the association between low SIS2 and unprotected sex (i.e., the effect of persistent sexual arousal on how sexual risk was managed during sexual encounters). In this study of heterosexual men, our assessment of sexual risk did not allow such a clear distinction between these two patterns, but the findings are compatible, particularly in respect to MS-1.

The impact of age in this study is noteworthy. Its relationship to sexual activity was relatively straightforward; the men who were engaging in sexual activity with a partner not involving sexual intercourse were younger than those who were engaging in sexual intercourse. They were also younger than those who had been sexually inactive during the past 6 months, a group that probably manifested a variety of reasons for being sexually inactive that would not be so dependent on age. On the other hand, age was positively predictive of our third marker, number of partners in the past 3 years with whom no condoms were used. This association is more difficult to explain, particularly as this analysis excluded those in monogamous relationships.

Conclusions

Both this study and our parallel study of gay men (Bancroft, Janssen, Strong, Carnes, et al., 2003a) reinforced the idea that personality factors, particularly those of more direct relevance to sexuality, are important in understanding HRSB. This should surprise few people, yet it is striking the extent to which such aspects of personality have been ignored in the now extensive literature on interventions for reducing high-risk sexual behavior.

However, before we can expect to obtain maximum benefit from studying personality factors in relation to HRSB, we will need to consider the mediating mechanisms more closely. It is not sufficient to say that individuals with low SIS2 or high MS-1 are more likely to take risks. We need to understand why. Our interesting finding of strong relationships between some of our trait measures and safer sex assertiveness points to the need for further exploration of the relation of these measures to other aspects of behavioral intention or motivation. Cooper and her colleagues (Cooper, Agocha, & Sheldon, 2000; Cooper, Shapiro, & Powers, 1998) have asked why people engage in sexual behavior, resulting in a series of motives, including pleasure enhancement and coping with negative mood states. Their longitudinal data suggests that such motives have stability, though not surprisingly are impacted by the relationship status at the time. They have explored how personality factors like neuroticism and sensation seeking interact with the various motives to influence behavior. While these authors acknowledge that these measures of motivation "tap only conscious or self-attributed motives" (Cooper et al., 1998, p. 1556) and that one cannot rule out the possibility that behavior shapes the motivation that is attributed to it (as may be the case with our safer sex assertiveness measure), their approach is novel and important. We have adopted a somewhat different but complimentary approach, which focuses on how individual variability in psychological states impact the more physiological aspects of sexuality. Our SIS and SES measures and the dual control model that they are intended to serve are unusual in focusing on sexual response (i.e., arousal) tendencies, rather than actual behavior or attitudes about behavior. Our approach to the relationship between mood and sexuality is of obvious relevance to the coping motive of Cooper et al. (2000). To what extent did their subjects who reported the coping motive experience increased or at least unchanged sexual interest during negative mood states? A useful next step would be to consider our more sexuality-focused traits in relation to their motives for sexual action.

So far, the literature on the relationship between personality and sexuality, particularly sexual risk taking, has been scattered and fragmented. It is now time that more concerted programs of research emerge to grapple with these potentially important determinants of high risk sexual behavior, developing improved methods for defining and assessing relatively enduring patterns of high risk sexual behavior in the process.

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