

Socially Desirable Responding and Sexuality Self-Reports

Cindy M. Meston
University of Texas at Austin

Julia R. Heiman
University of Washington

Paul D. Trapnell
Ohio State University at Mansfield

Delroy L. Paulhus
University of British Columbia

We assessed the impact of two distinct forms of socially desirable responding—self-deceptive enhancement and impression management—on sexuality self-reports ($n = 504$) under anonymous testing conditions. Results revealed significant positive relationships between self-deceptive enhancement and sexual adjustment variables for both sexes. Impression management was significantly negatively related to a number of intrapersonal (e.g., unrestricted sexual fantasies, sexual drive) and interpersonal (e.g., sexual experience, virginity status) sexual behaviors for females, and to unrestricted sexual attitudes and fantasies for males. We calculated correlations were first calculated between self-deceptive enhancement, impression management, and personality and conservatism scores. Self-deceptive enhancement and impression management were significantly associated with personality for males and females, and with conservatism for females only. When personality and conservatism variance were partialled out, associations between self-deceptive enhancement and sexuality variables were eliminated, but associations between impression management and sexuality measures remained significant. These findings highlight the importance of a two-factor approach to assessing socially desirable responding, and provide modest support for the view that response bias may intrude in self-report sex data, even under anonymous testing conditions.

Socially desirable responding, the tendency to tailor responses for the purpose of looking good, has been a topic of concern in self-report assessment for over six decades (e.g., Bernreuter, 1933). The influence of socially desirable responding on self-report measures of sexual behavior has been of particular concern given the private nature of sexual activity, and the fact that people often feel embarrassed or threatened when asked to provide information on their sexual encounters (e.g., Herold & Way, 1988). The tendency for respondents to present themselves in a favorable light can undermine the validity of self-report indices of sexuality by leading respondents to (a) underreport or overreport certain sexual acts, (b) deny having engaged in or falsely claim participation in certain sexual acts, and (c) omit answers to questions they believe will reflect negatively on their character. The assumption that socially desirable responding and other response styles invariably distort the accuracy of self-report sexual measures has led some reviewers to question whether self-report data can in fact provide any meaningful information about human sex-

uality. For example, in response to the recently published survey *Sex in America* (Michael, Gagnon, Laumann, & Kolata, 1994), one reviewer concluded:

... we cannot avoid the main question, whether those who did respond, reluctantly or eagerly, told the truth . . . It is frightening to think that social science is in the hands of professionals who are so deaf to human nuance that they believe that people do not lie to themselves about the most freighted aspects of their own lives, and that they have no interest in manipulating the impression that strangers have of them. (Lewontin, 1995).

Past researchers have attempted to assess the validity of self-reported sexuality data by a variety of means: comparing self-report sexual measures with biological markers such as the presence of sperm or seroconversion rates, comparing respondent and partner reports of sexual experiences, examining test-retest correlations for sexuality questions, comparing questionnaire responses to responses obtained via face-to-face interviews, and comparing self-report measures of sexual behaviors before and after respondents are informed that lies could be detected by a polygraph recording (for reviews, see Catania, Gibson, Chitwood, & Coates, 1990; Catania, Gibson, Marin, Coates, & Greenblatt, 1990). A more practical means of assessing response style influences, commonly used in the field of personality research, is to measure socially desirable responding directly, alongside the measure of interest. Response style effects can then be partialled out of correlations to control for spurious associations. Alternatively, raw

This research was supported by a Social Sciences and Humanities Research Council of Canada Postdoctoral Fellowship to Dr. Cindy M. Meston and a Social Sciences and Humanities Research Council of Canada Postdoctoral Fellowship to Dr. Paul D. Trapnell.

Address correspondence to Dr. Cindy M. Meston, University of Texas at Austin, Department of Psychology, Mezes 330, Austin, TX 78712; e-mail: meston@psy.utexas.edu

scores may be adjusted by an amount commensurate with contamination due to socially desirable responding by regressing the measure of interest on socially desirable responding (Paulhus, 1991). This latter technique, for example, is standard practice in scoring the Minnesota Multiphasic Personality Inventory (MMPI; McKinley, Hathaway, & Meehl, 1948), whereby certain clinical scale scores are adjusted using the K Scale as a measure of socially desirable responding. This scale consists of items that discriminate the responses of normal persons from those with known psychopathology who score as normals on the clinical scales. With regard to sexuality, a number of studies have included measures of socially desirable responding in self-report assessments. For example, Eysenck (1976) incorporated a measure of dissimulation he termed the *Lie Scale* (Eysenck & Eysenck, 1964) in his examination of the relation between sex and personality. Abramson (1973) also included the Lie Scale as a measure of response distortion in his assessment of the relation between masturbation frequency and several aspects of personality and behavior. More commonly, researchers have employed the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964) as a control measure for response style influences on, for example, sexual desire (Beck, Bozman, & Qualtrough, 1991), sexual aggression (Porter, Critelli, & Tang, 1992), sexual satisfaction (McCann & Biaggio, 1989), attitudes toward lesbians (Simon, 1995), hyperfemininity (McKelvie & Gold, 1994), and extramarital involvement (Andrus, Redfering, & Oglesby, 1977).

Recent research on the structure of socially desirable responding suggests that a crucial distinction exists between response biases that involve self-deception and those that involve other-deception. Differentiating between these facets seems essential for fully understanding relationships between socially desirable responding and self-report measures. To this end, Paulhus (1984) conducted a series of large factor analytic studies that demonstrated the existence of two relatively independent facets of desirable responding: self-deceptive enhancement and impression management. Self-deceptive enhancement reflects an honest but overly positive (e.g., positively biased) self-presentation style. Further research indicated that self-deceptive enhancement is intrinsically positively linked to personality constructs such as adjustment, optimism, self-esteem, and confidence (Paulhus, 1991). Unlike self-deceptive enhancement, which is relatively resistant to change under varied levels of situational demand, impression management is highly influenceable under circumstances in which demand for positive self-presentation is high (Paulhus, 1991). Factor analyses of self-deceptive enhancement and impression management along with traditional social desirability measures indicate that other measures can be represented in terms of self-deceptive enhancement and impression management factors. For example, the MMPI K Scale loads highly on the self-deceptive enhancement factor, the Lie Scale loads highly on the impression management factor, and the widely used Marlowe-Crowne Social Desirability Scale loads highly on both factors (for review, see Paulhus, 1991). Given the evidence that self-deceptive

enhancement and impression management reflect different psychological processes, answering the question of whether socially desirable responding plays a role in self-report data should be approached from a two-factor perspective.

We attempted to provide the first empirical examination of the relation between socially desirable responding and sexuality self-reports using the two-factor approach to the assessment of response biases. We used the most widely validated current measure of desirable responding, the Balanced Inventory of Desirable Responding (BIDR-6; Paulhus, 1989), to assess self-deceptive enhancement and impression management. Comprehensive measures of interpersonal sexual behaviors, intrapersonal sexual behaviors, sexual adjustment, and sexual orientation comprised the sexuality measures. We wanted, first, to examine whether response biases play a role in self-report sex data when collected under well-controlled, anonymous testing conditions and, second, to examine whether self-deceptive enhancement and impression management are differentially related to subgroups of sexuality variables.

Unlike self-deceptive enhancement, impression management is highly influenced by situational demands. Under conditions of high demand (e.g., during job interviews), associations between impression management and the measure of interest may be interpreted as an effort to impress or "fake good." Under anonymous testing conditions, however, when motivation to fake good may be expected to be low, the interpretation of a relationship between impression management and the measure of interest is less clear. In an early study of the relation between sex and personality, Eysenck (1976) suggested that under anonymous questionnaire conditions, correlations between measures of dissimulation (Lie Scale; Eysenck & Eysenck, 1964) and sexuality measures are more likely a function of personality structure than of socially desirable responding. That is, persons who report conservative sexual attitudes do so not because they are trying to "fake good" but rather because they are "conformist, orthodox, and conservative in their beliefs" (Eysenck, 1976). In support of this assertion, Eysenck cited the work of Joe and Kostyla (1975), which indicated a significant negative relationship between conservatism and sexual experience, and the fact that the Lie Scale correlated with conservatism. Paulhus (1991) also suggested that under anonymous testing conditions, impression management may be tapping social conventionality or other personality facets so that high correlations cannot necessarily be interpreted as contamination (Paulhus, 1991).

If a relationship exists between socially desirable responding and sexuality measures under the anonymous testing conditions used in the current study, a further purpose of this study will be to assess whether this relationship is explainable in terms of stable personality or conservatism traits. One would expect that if such a relationship exists, and it is explainable in terms of personality (Paulhus, 1991) or conservatism (Eysenck,

1976) factors, then statistically controlling for such variance would substantially diminish the strength of the relationship. If, on the other hand, a relationship remains between socially desirable responding and sexuality measures after controlling for the combined variance of personality and conservatism, the findings would suggest that self-presentation bias may play a role in self-report sex data, even under anonymous testing conditions.

METHOD

Participants

Participants were 504 University of British Columbia undergraduate volunteers (208 were males) who completed the study in exchange for course credit. The participants were recruited from introductory psychology courses during either the 1993–1994 Fall session (September–May) or the 1994 Spring and Summer sessions (May–July). Approximately 44% of the participants were of Southeast Asian ancestry, and 57% were of European ancestry. The proportion of Southeast Asian ancestry individuals in the current sample is substantially higher than the proportion noted in the province of British Columbia as a whole (13%; Statistics Canada, 1992), and also appears to be somewhat higher than that of the University of British Columbia undergraduate population as a whole. Among Non-Asians, 85% listed English as their first language, and 83% listed Canada as their country of birth. Among Asians, 21% listed English as their first language, 29% listed Canada as their place of birth, 45% had immigrated to Canada within the 5 years before the study, and 26% had immigrated to Canada more than 5 years before the study. Participants ranged in age from 17 to 49, with 93% between the ages of 17 and 25. Median ages of females and males were 19 and 20, respectively. Males were slightly more coitally experienced than females (68% versus 56%). Among females, 2.1% ($n = 6$) reported being exclusively or mostly homosexual and 2.1% ($n = 6$) reported being bisexual. Among males, 4.4% ($n = 9$) reported being exclusively or mostly homosexual and none reported being bisexual.

Sexuality Measures

Interpersonal sexual behavior. Age of first sexual foreplay and age of first intercourse were assessed using the following questions: "At what age did you first engage in sexual caressing with someone (touching of breasts or genitals)?" and "At what age did you first experience sexual intercourse?" The latter item was taken from the Drive subscale of the Derogatis Sexual Functioning Inventory (DSFI; Derogatis, 1978). Test-retest reliability for this scale (based on a 14-day interval) is .77 (Derogatis & Melisaratos, 1979). *Virginity status* was scored as a dichotomous variable. Persons were considered nonvirgins if they wrote an age for first intercourse or if they had experienced any of the sexual intercourse items included in the Sexual Experience Subscale (SES) of the DSFI. The SES was used to evaluate *variety of sexual experience*. This scale consists of 24 specific sexual acts representing a broad spectrum of

sexual experiences, ranging from the earliest behaviors occurring in the human sexual behavior sequence (e.g., "kissing on the lips") to more advanced sexual behaviors (e.g., "mutual oral stimulation of genitals"), and various positions of coitus (e.g., "intercourse—sitting position"). These 24 items are summed to provide an overall index of the range of sexual experience (coefficient alphas = .96 and .97 for males and females, respectively). Test-retest reliability coefficient for the SES (based on a 14-day interval) is .92 (Derogatis & Melisaratos, 1979). *Frequency of petting and intercourse* were assessed separately by asking respondents to answer how often they typically engage in intercourse, and kissing and petting, on an eight-point Likert scale ranging from *not at all* (0) to *four or more times a day* (8). These items were taken from the Drive subscale of the DSFI (test-retest reliability for this scale = .77; Derogatis & Melisaratos, 1979). Coefficient alphas for this two-item scale were .85 and .81 for males and females, respectively. Because variance in interpersonal sexual behavior is, to a great extent, independent of variance in intrapersonal sexual behavior (see Meston, Trapnell, and Gorzalka, 1996), we did not score a composite measure of sociosexuality as per Simpson and Gangestad (1991). Instead, we scored two composites—one consisting of unrestricted interpersonal behavior items, and one for unrestricted fantasy and attitude items (i.e., intrapersonal sexuality). Before computing these composites, we standardized individual items within each gender by ethnicity (i.e., Asian vs. Non-Asian) subsample. *Unrestricted sexual behavior* was scored by summing two behavior items ("With how many different partners have you had sex in the past year?" and "total number of one-night stands") from the Sociosexual Orientation Inventory (SOI; Simpson and Gangestad, 1991) and four additional items: (1) "With how many different partners have you engaged in any sexual foreplay (e.g., deep kissing, petting, genital caressing) in the past year?," (2) "With how many partners have you had sexual intercourse in your lifetime (include all long-term relationships, brief relationships, and one-time-only relationships and encounters)?," (3) "Have you ever been involved in more than one ongoing sexual relationship at the same time (yes/no)?," and (4) "If you were in a happy and committed relationship, can you imagine a situation in which you might have a brief sexual encounter with someone other than your partner (assume there was absolutely no risk of the affair continuing, or of pregnancy, disease, or discovery by your partner) (yes/no)?". This latter item was adapted from Symons (1987). Coefficient alphas for the unrestricted sexual behavior composite were .77 and .76 for males and females, respectively. The test-retest reliability coefficient for the SOI (based on a two-month interval) is .94 (Simpson & Gangestad, 1989).

Intrapersonal Sexual Behavior. Frequency of masturbation and frequency of sexual fantasy were assessed separately by asking respondents to circle a number between 0 (*not at all*) and 8 (*four or more times a day*) corresponding to how often they typically engage in masturbation and sexual fantasies. Range of sexual fantasies were

assessed using the 20 fantasy items from the DSFI fantasy subscale and two additional fantasy items that addressed fantasy areas not assessed by the DSFI: *being masturbated to orgasm by your partner* and *engaging in sex while some person or persons are watching you*. The DSFI fantasy item *anal intercourse* was divided into two separate fantasy items, *anal intercourse (you doing to someone)* and *anal intercourse (someone doing to you)*, for a total of 23 fantasy items. The fantasy items were summed to provide an overall index of *variety of sexual fantasy* (coefficient alphas = .92 for males and females). The test-retest reliability coefficient for the DSFI fantasy subscale (based on a 14-day interval) is .93 (Derogatis & Melisaratos, 1979). The DSFI Attitudes subscale was used to assess *liberal sexual attitudes*. This subscale is composed of 15 liberal and 15 conservative statements relative to sexual behaviors. Respondents are asked to answer the 30 questions on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Endorsement of conservatism items are reverse scored and summed together with the liberalism items to provide an overall index of liberal attitudes toward sexuality (coefficient alphas = .87, .90 for males and females, respectively). The test-retest reliability coefficient for the DSFI Attitudes subscale (based on a 14-day interval) is .96 (Derogatis & Melisaratos, 1979). A composite variable representing *unrestricted sexual attitudes and fantasies* (coefficient alphas = .77 and .76 for males and females, respectively) was constructed by summing z-scores for the following five variables: (1) a four-item cluster of SOI attitudes regarding casual sexual involvements (e.g., "I can imagine myself being comfortable and enjoying "casual" sex with different partners."; responses range from 1 (*strongly disagree*) to 5 (*strongly agree*)); (2) a three-item cluster of DSFI attitudes regarding extramarital sexual involvements (e.g., "Extramarital sexual affairs can make people better marital partners."; responses range from 1 (*strongly disagree*) to 5 (*strongly agree*)), (3) a three-item composite of DSFI fantasies about unrestricted sex (e.g., "Having intercourse with an anonymous, attractive stranger."; responses range from 0 (*never*) to 4 (*quite often*)), (4) a single-item rating of the frequency of sexual fantasies about someone other than the dating partner (responses range from 1 (*never*) to 5 (*probably every day*)), and (5) the item "If it was totally safe and considered socially acceptable, I would probably enjoy having sex with someone other than my partner once in a while."; responses range from 1 (*strongly disagree*) to 5 (*strongly agree*)). A composite variable representing *subjective sexual drive* (coefficient alphas = .66 and .77 for males and females, respectively) was constructed by summing z-scores of two variables: (1) "Overall, how would you rate your level of sex drive?" (responses range from 1 (*below average*) to 5 (*above average*)), and (2) a three-item composite of self-rated sexual arousability ("I am a really sensual and sexual kind of person, someone who feels very aroused, very often."; "Once in a while, I feel so sexually aroused, I can't think of anything but sex."; "I've never really felt very interested in sex."; the latter was item reverse scored).

For the sexual arousability items, responses range from 1 (*strongly disagree*) to 5 (*strongly agree*).

Sexual Adjustment. *Total sexual satisfaction* was evaluated using the Sexual Satisfaction Scale (SSS) of the Sexual Experiences Inventory (Trapnell & Meston, 1995). This scale consists of 25 items that evaluate both global sexual satisfaction and a range of specific sources of sexual dissatisfaction: arousal, orgasm, and desire concerns, and concerns about sexual compatibility, sexual frequency, partner compatibility, and physical attractiveness. Respondents were asked to answer the 30 questions, with reference to their most recent close relationship, on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Coefficient alphas for the sexual satisfaction composite were .92 and .93 for males and females, respectively. We constructed four content facets by the following means. We grouped items on a rational basis into four preliminary clusters. We then refined the scoring of this set of items by means of principal component analyses within each gender by ethnicity (i.e., Asian vs. Non-Asian). The items loading most highly and uniquely on each of the four factors across these analyses defined the resulting sexual satisfaction facet scales. The four facets were four *sexual contentment* items (e.g., "I often feel something is missing from my present sex life."), four *sexual competence* items (e.g., "I'm concerned that my occasional problems becoming aroused could occur again or become worse."), five *sexual communication* items (e.g., "I usually feel comfortable discussing sex when my partner wants to."), and three *sexual compatibility* items (e.g., "I often feel that my partner's beliefs and attitudes about sex are too different from mine."). Coefficient alphas for the contentment, competence, communication, and compatibility subscales were .92, .80, .76, .81, and .73 for males and .93, .82, .75, .81, and .77 for females, respectively.

Body image was assessed using the Body Image subscale of the DSFI. This scale consists of self-ratings on five gender specific physical attributes (e.g., "Women/men would find my body attractive.") and ten general body attributes (e.g., "My face is attractive."). Respondents are asked to answer the 15 questions on a five-point Likert scale ranging from *not at all* (1) to *extremely* (5). These items were summed in a positive direction to provide a single numerical index of satisfaction with one's physical appearance. Coefficient alphas based on the current sample were .82 and .81 for males and females, respectively.

Sexual Orientation. *Sexual identification* was assessed using a six-point Likert scale similar to the Kinsey Heterosexual-Homosexual Rating Scale (Kinsey, Pomeroy, & Martin, 1948). Participants indicated their sexual orientation on the scale ranging from 1 (*exclusively homosexual*) to 6 (*exclusively heterosexual*). *Frequency of homosexual fantasies* was assessed by asking respondents how often, if at all, they experienced homosexual fantasies (responses range from 0 (*never*) to 4 (*quite often*)). *Homosexual attitudes* were assessed using three items from the DSFI Attitude subscale (e.g., "Homosexuality is simply a matter of sexual orientation and not good or bad, sick or healthy.").

Respondents answered the questions on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Coefficient alphas were .88 and .87 for males and females, respectively.

Socially Desirable Responding

Response biases were assessed using the BIDR-6 (Paulhus, 1989, 1998). The inventory consists of two relatively independent 20-item measures of the tendency to give socially desirable or undesirable responses on self-reports. The self-deceptive enhancement subscale indexes the tendency to give honest but unconsciously inflated self-descriptions (e.g., "It's all right with me if some people happen to dislike me."; "I never regret my decisions."). The impression management subscale is sensitive to the tendency to give consciously inflated self-descriptions (e.g., "I sometimes tell lies if I have to."; "When I was young I sometimes stole things."). Respondents rated their agreement with items on seven-point Likert scales ranging from 1 (*not true*) to 7 (*very true*). Responses were scored using the dichotomous scoring procedure (Paulhus, 1989): The negatively keyed items are reverse scored, one point is awarded for each extreme response (a 6 or 7), and subscale scores are calculated by summing the points across the 20 items (range = 1–20). According to Paulhus (in press) the stringency of the dichotomous scoring procedure ensures that high scores are attained only by respondents who give exaggerated responses to highly desirable items. One item on the self-deceptive enhancement subscale (i.e., "I have sometimes doubted myself as a lover.") and one item on the impression management subscale (i.e., "I never read sexy books or magazines.") overtly refer to sexuality. Because the presence of these items may be expected to inflate correlations between BIDR and sexuality measures unduly, these items were omitted from the scoring of self-deceptive enhancement and impression management composites. Coefficient alpha reliability estimates based on the current study were .67 (males) and .64 (females) for self-deceptive enhancement and .68 (males) and .70 (females) for impression management. These values are slightly lower than those Paulhus (1991) reported (i.e., .68–.80 for self-deceptive enhancement and .75–.86 for impression management) using the full 20-item scales and the dichotomous scoring procedure. Paulhus (1991) reported test-retest correlations (based on a five-week interval) of .69 for the self-deceptive enhancement scale and .65 for the impression management scale.

Personality and Social Conservatism Measures

We used the Big Five Inventory (BFI), a 44-item inventory developed by John, Donahue, and Kentle (1991), to assess each of the Big Five personality dimensions (extraversion, agreeableness, conscientiousness, neuroticism, and openness). The items are endorsed on five-point Likert scales ranging from *not accurate* (1) to *very accurate* (5). Coefficient alphas for extraversion, agreeableness, conscientiousness, neuroticism, and openness were .80, .74, .76, and .76, .82 for males and .88, .76, .81, .79, and .83 for females, re-

spectively. John et al. (1991) reported test-retest correlations (based on a six-week interval) between .65 and .83.

We measured social conservatism using the Right-Wing Authoritarianism scale (RWA; Altemeyer, 1988). The RWA consists of a set of attitude statements thought to be indicative of authoritarian sociopolitical tendencies. Worded direction of the 30 items is balanced to minimize acquiescent responding effects. For example, 15 items are worded in an authoritarian direction (e.g., "What our country really needs instead of more civil rights, is a good stiff dose of law and order."), and 15 items are worded in an antiauthoritarian direction (e.g., "As soon as we get rid of the traditional family structure, where the father is the head of the family and the children are taught to obey authority automatically, the better; the old-fashioned way has a lot wrong with it."). Respondents are asked to answer the 30 questions on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The items are summed to provide a single score of authoritarianism (coefficient alphas = .90 and .92 for males and females, respectively). The test-retest coefficients based on one-week and 28-week test intervals are .95 and .85, respectively (Altemeyer, 1988).

PROCEDURE

Participants completed the BIDR-6, the BFI, and the RWA on a voluntary, take-home basis. Approximately two weeks later, participants completed the sexuality questionnaires in groups of 5–10 individuals in a large testing room arranged to provide maximum privacy for responding (e.g., visual barriers were placed between participants). Participants completed the SEI and DSFI first, followed by the SOI. Participants completed the sexuality measures in approximately one hour. During all sessions, a same-sex researcher was present to provide instructions and to answer any questions. We made the testing conditions anonymous by requesting that no names or other personally identifying information be placed on any of the forms, and by using a randomly selected number for participant identification across the two sessions (at home and in the lab). In addition, anonymity was stressed verbally and via written instructions that directed participants to fold their completed answer sheets, to seal them in a blank envelope, and to deposit the envelope in a large, sealed box upon leaving the testing room. Before beginning the sexuality questionnaires, participants were asked to read a brief statement informing them of the sexual, personal nature of the questionnaires, the voluntary, anonymous, and confidential nature of all responses, and their right to withdraw from the study at any time for any reason without any loss of credit. No participants who arrived for their second, in-lab session withdrew from the study. The attrition rate in return of the take-home survey was approximately 20%, a value within the range of that typically obtained in attitude or personality surveys of this type among undergraduate psychology students at the University of British Columbia. Approximately 5% of students who completed the take-home questionnaires and signed up for the second session failed to

make their appointment. These participants were recontacted by telephone, and of these, approximately one third (i.e., 2% of the sample) did not complete the study.

RESULTS

Because Meston, Trapnell, and Gorzalka (1996) recently reported significant differences in a wide range of sexuality measures between undergraduate students of Southeast Asian and European ancestry, mean differences between ethnicity in the present sample were removed by standardizing all of the sexuality variables within each of the four gender by ethnic subgroups. Lai and Linden (1993) reported no significant differences in self-deceptive enhancement or impression management scores between persons of Southeast Asian and European ancestry. Following standardization of scores, we performed a series of moderated multiple regressions separately on the female and male data to test for ethnic differences in associations between the BIDR scales and the sexuality measures. In each analysis, we regressed self-deceptive enhancement or impression management on the dichotomous ethnicity variable and the sexuality variable of interest (e.g., "age of first sexual intercourse") and statistically evaluated the cross-product of ethnicity and the sexuality variable for any residual association with self-deceptive enhancement or impression management. Of these 84 analyses (21 sexuality variables $\times$ 2 BIDR variables $\times$ gender), two ethnicity interactions fell below a nominal pairwise alpha of .05 (specifically, $p < .033$, and $p < .024$). Neither were significantly different from zero at the most liberal familywise corrected alpha of .002 (.05/21 comparisons). Because no significant ethnic differences in associations were apparent, we performed subsequent analyses on data collapsed across ethnicity.

We conducted separate Pearson correlations between self-deceptive enhancement and impression management and sexuality measures. To be cautious about accumulating Type I error on mean comparisons across the 21 sexuality variables, we considered only differences of $p < .002$ ($p < .05/21$) to be statistically reliable. The correlations of all the sexuality variables with self-deceptive enhancement and impression management are presented in Tables 1 (females) and 2 (males). Although a small number of significant correlations are evident for self-deceptive enhancement and impression management, overall they are rather small. Only one self-deceptive correlation exceeds .25 (body image among females, $r = .26$), and only two impression management correlations exceed .25 (unrestricted sexual behavior among females, $r = -.26$, and unrestricted sexual attitudes and fantasies among females, $r = -.30$). In the sexual adjustment category, all significant correlations were due to self-deceptive enhancement, not impression management. Specifically, total sexual satisfaction was significant for males, and sexual competence and body image were significant for females. Other than the relations with these sexual adjustment variables, self-deceptive enhancement was not significantly correlated with any other sexuality variable. In the sexual orientation category, there were no significant correlations between any

of the sexuality items and either of the social desirability scales.

Impression management exhibited small significant negative correlations with many of the behavior reports—both interpersonal and intrapersonal—among females. Specifically, high impression-management scorers were more likely than low impression-management scorers to report being a virgin and to hold conservative sexual attitudes, and were less likely to engage in unrestricted sexual behaviors. They also reported less sexual experience, an older age of first foreplay, lower sexual drive, and a more restricted range of sexual fantasies. For males, impression management was significantly negatively correlated with only one item, unrestricted sexual attitudes and fantasies.

To examine Paulhus's (1991) suggestion that under anonymous testing conditions personality variance may account for relationships between socially desirable responding and measures of interest, we conducted Pearson correlations between self-deceptive enhancement, impression management, and each of the Big Five personality factors. Detailed examination of the relations between sexuality and personality are presented elsewhere (Trapnell & Meston, 1996) and are not, therefore, reported here. Relevant to the present study, Trapnell and Meston (1996) found that interpersonal aspects of sexuality (e.g., sexual experience, number of sexual partners) are positively associated with extraversion and disagreeableness; intrapersonal aspects of sexuality (fantasy, attitudes, masturbation) are positively associated with openness and, to some extent, extraversion and disagreeableness; and measures of sexual adjustment (e.g., positive body image, sexual satisfaction) are negatively associated with neuroticism and, to a lesser extent, introversion.

As can be seen in Table 3, both for females and for males, self-deceptive enhancement and impression management correlated moderately with global dimensions of personality. For men and women, self-deceptive enhancement was moderately, positively associated with extraversion, conscientiousness, and openness and moderately negatively associated with neuroticism. For men and women, impression management was moderately, positively associated with conscientiousness, and was not related to extraversion or openness. Overall, the correlations between personality measures and self-deceptive enhancement and impression management found in the present study are consistent with those by Paulhus (in press) reported.

We next explored Eysenck's (1976) suggestion that social conservatism may account for most of the association between socially desirable responding and sexuality measures. We conducted Pearson correlations between self-deceptive enhancement, impression management, and RWA scores. As can be seen in Table 3, scores on the RWA were significantly associated with self-deceptive enhancement and impression management for females only, and these associations were small indeed.

Because personality and conservatism were significantly associated with self-deceptive enhancement and impression management, and were previously reported to be

associated with sexuality measures (Meston & Trapnell, 1996; Trapnell & Meston, 1996), partial correlations between self-deceptive enhancement and impression management and sexuality variables were conducted controlling for the combined Big Five and conservatism (RWA) variance. As can be seen in column two of Tables 1 and 2, virtually all of the significant associations between self-deceptive enhancement and sexuality measures were substantially reduced after controlling for the effects of personality and conservatism. The previously noted significant correlation between self-deceptive enhancement and total sexual satisfaction for males, and the significant correlations between self-deceptive enhancement and sexual competence and body image for females, were eliminated after we controlled for the effects of the Big Five and RWA. By contrast, as can be seen in column four of Tables 1 and 2, more than half of the significant associations between sexuality measures and impression management remained significant after we controlled for the effects of personality and conservatism. Exceptions were the correlations for females between impression management and age of first sexual foreplay, virginity status, and sexual experience.

DISCUSSION

We examined the relationships between two components of desirable responding, self-deceptive enhancement

and impression management, and a broad range of sexuality variables. Impression management showed small associations with certain inter- and intrapersonal sexuality variables, and these associations were limited almost exclusively to women. Self-deceptive enhancement showed small associations with some of the sexual adjustment variables. All of the associations between self-deceptive enhancement and sexual adjustment, and almost all of the associations between impression management and interpersonal sexual behaviors, were explainable in terms of personality factors. These findings suggest that sexuality researchers need to attend to potential bias in the reporting of certain sexuality variables. For the most part, however, sexuality self-reports, when collected under anonymous testing conditions, do not appear to be particularly subject to social desirability biases.

The relationship between self-deceptive enhancement and sexual adjustment in the present study is consistent with previous research that has found positive relationships between self-deceptive enhancement and measures of self-esteem and mental health, and negative relationships with trait and social anxiety and personal distress (Paulhus, 1984; Taylor & Brown, 1988). To the extent that self-deceptive enhancement is related to various self-serving biases such as hindsight bias, overconfidence, illusions of control, overclaiming, and self-enhancement (for review, see Paulhus, 1991), self-deceptive enhancement in-

Table 1. Correlations of Sexuality Reports With Self-Deceptive Enhancement and Impression Management Among Females

	Self-Deceptive Enhancement		Impression Management	
	Correlations	Partial Correlations ^a	Correlations	Partial Correlations ^a
Interpersonal Sexual Behavior				
Age of first sexual foreplay (1)	.01	.06	.22*	.20
Age of first intercourse (1)	-.01	.01	.13	.09
Virginity status (1)	.01	.04	.18*	.15
Variety of sexual experience (24)	.03	-.02	-.22*	-.18
Frequency of petting & intercourse (2)	.00	-.03	-.15	-.14
Unrestricted sexual behavior (6)	-.08	-.16	-.26*	-.22*
Intrapersonal Sexual Behavior				
Frequency of masturbation (1)	.04	-.07	-.13	-.10
Frequency of sexual fantasy (1)	.09	.05	-.11	-.08
Variety of sexual fantasy (23)	.14	.06	-.25*	-.23*
Liberal sexual attitudes (30)	.16	-.02	-.25*	-.27*
Unrestricted sexual attitudes & fantasies (5)	-.03	-.09	-.30*	-.23*
Subjective sexual drive (2)	.17	.09	-.21*	.23*
Sexual Adjustment				
Total sexual satisfaction (25)	.16	.08	.12	.10
Sexual contentment (4)	.09	-.01	.14	.12
Sexual competence (4)	.19*	.14	.04	.00
Sexual communication (5)	.16	.11	.07	.09
Sexual compatibility (3)	.06	-.03	.12	.10
Positive body image (15)	.26*	-.07	.02	.05
Sexual Orientation				
Sexual identification (1)	.00	.02	.03	-.04
Frequency of homosexual fantasies (1)	-.01	-.10	-.17	-.10
Homosexual attitudes (3)	.12	-.01	-.17	-.15

Note. Maximum $n = 296$. Number of items per scale is indicated in parentheses.

^aControlling for the Big Five and conservatism.

* $p < .002$.

Table 2. Correlations of Sexuality Reports With Self-Deceptive Enhancement and Impression Management Among Females

	Self-Deceptive Enhancement		Impression Management	
	Correlations	Partial Correlations ^a	Correlations	Partial Correlations ^a
Interpersonal Sexual Behavior				
Age of first sexual foreplay (1)	-.02	.04	.18	.18
Age of first intercourse (1)	-.06	-.01	.23	.22
Virginity status (1)	-.11	-.02	.15	.16
Variety of sexual experience (24)	.07	-.03	-.15	-.14
Frequency of petting & intercourse (2)	.08	.01	-.13	-.12
Unrestricted sexual behavior (6)	-.02	-.13	-.16	-.16
Intrapersonal Sexual Behavior				
Frequency of masturbation (1)	-.20	-.19	-.08	-.03
Frequency of sexual fantasy (1)	-.02	-.05	-.03	-.02
Variety of sexual fantasy (23)	-.01	-.04	-.18	-.16
Liberal sexual attitudes (30)	.14	.12	-.08	-.03
Unrestricted sexual attitudes & fantasies (5)	-.01	-.03	-.23*	-.21*
Subjective sexual drive (2)	-.04	-.02	-.20	-.14
Sexual Adjustment				
Total sexual satisfaction (25)	.21*	.14	.05	.07
Sexual contentment (4)	.13	.08	.01	.00
Sexual competence (4)	.20	.15	-.05	-.02
Sexual communication (5)	.17	.08	.04	.06
Sexual compatibility (3)	.13	.09	.06	.07
Positive body image (15)	.20	-.07	.00	.01
Sexual Orientation				
Sexual identification (1)	.07	.05	-.09	-.13
Frequency of homosexual fantasies (1)	-.04	-.01	-.01	.04
Homosexual attitudes (3)	.08	.06	.10	.19

Note. Maximum $n = 208$. Number of items per scale is indicated in parentheses.

^aControlling for the Big Five and conservatism.

* $p < .002$.

dexes exaggerated self-positivity. In this regard, our results suggest that viewing oneself in positive terms may, for a male, include viewing oneself as sexually satisfied and, for a female, include viewing oneself as sexually competent and physically attractive. As noted earlier, however, relations with self-deceptive enhancement is inextricably linked to personality variance and does not represent faking or data contamination. In the sexual self, as in the global self-image, high self-deceptive enhancement scores may simply reflect an energetic, optimistic orientation to life. Consistent with this interpretation, we found that self-deceptive enhancement was substantially negatively corre-

lated with neuroticism, and moderately positively correlated with extraversion, conscientiousness, and openness. More to the point, relationships between self-deceptive enhancement and sexuality measures were eliminated after we controlled for the effects of Big Five personality factors.

In contrast to the associations between self-deceptive enhancement and sexuality measures, many of the associations between impression management and sexuality measures (primarily intrapersonal sexuality variables) remained significant after we controlled for the combined effects of personality and conservatism. This suggests that

Table 3. Correlations of Self-Deceptive Enhancement and Impression Management With Measures of Personality and Social Conservatism

	Females		Males	
	Self-Deceptive Enhancement	Impression Management	Self-Deceptive Enhancement	Impression Management
Big Five Personality Factors				
Extroversion	.21***	-.00	.21**	-.05
Agreeableness	.17**	.36***	.10	.12
Conscientiousness	.37***	.28***	.30***	.22**
Neuroticism	-.40***	-.13*	-.32***	-.13
Openness to experience	.26***	-.01	.19**	-.06
Social Conservatism				
Right-wing authoritarianism	-.17**	.13*	-.04	.12

* $p < .05$. ** $p < .01$. *** $p < .001$.

the relationships between impression management and sexuality measures we have noted cannot be explained in terms of personality or conservatism factors. Thus, with regard to certain sexuality questions, the impression managers (particularly females) may tend to present themselves in a favorable light even under stringent anonymous conditions in which situational demands may be expected to be absent. This interpretation is inconsistent with previous research that has shown that conscious efforts to respond in a desirable fashion are minimal under conditions of anonymity (Paulhus, 1991). Perhaps, then, assessing sexuality differs in important ways from assessing other personal characteristics: Presenting a sexually desirable image is so highly ingrained that it is resistant to decreased contextual demands. If this is the case, our results suggest that, for females, a favorable sexual image involves acting in a sexually restrained manner and holding conservative attitudes toward uncommitted sexual relations. For males, our data also suggest that a desirable sexual image includes holding conservative opinions about uncommitted sexual relations, but does not include *behaving* in a sexually restrained fashion.

Studying a comparable undergraduate population at the University of British Columbia, Meston, Trapnell, and Gorzalka (1996, 1998) reported that males not only behaved in a more sexually unrestrained manner than did females, but held more liberal attitudes in this regard. Gender differences in sexual attitudes tend to be largest, in fact, with respect to sociosexual restrictiveness (e.g., see Buss, 1994). Due to the close association between sexual restraint and traditional sex roles, one would expect to find a correlation between impression management and restrictiveness of sexual attitudes among women, although not necessarily among men. Instead, we found no evidence of a gender difference in this association. Why some men are motivated to maintain a sexually conservative social impression is open to speculation. To an important degree, men and women receive similar socialization regarding sexuality. To the extent that both men and women incorporate the moral norms of sexual restraint and monogamy, they may feel similarly motivated to profess sexual opinions congruent with these norms. Alternatively, men and women may feel a need to express conservative opinions regarding casual sex to attain their own unique sexual goals. Women may feel this pressure because expressing liberal attitudes toward uncommitted sexual relations may lead to unwanted sexual advances and demands from men (who, being physically larger, are always a potential physical threat). Impression-managing men, on the other hand, may have a strong incentive to express conservative values publicly, whether or not they are congruent with their sexual feelings, because they believe that women seek evidence of these values before agreeing to sexual involvement. That is, these men may profess the importance of partner exclusivity and deep emotional commitment before sex partly to create a sexually desirable impression on women.

An alternative interpretation of the relationship between

impression management and sexuality measures in the current study is that persons who, for example, report that they "always pick up [their] litter" (one item in the impression management scale) may report relatively low levels of sexual experience and fantasy because both of these reports are relatively truthful. There may, in fact, be a genuine empirical association between civic dutifulness and sexual involvement, at least in undergraduate populations. If so, it is not clear why measures of conscientiousness and social conservatism explained so little of the association of impression management with sexuality. Perhaps personality factors were measured here in too global and abstract a manner to account for much of the relationship between impression and sexuality. Specific traits within the Big Five factors conscientiousness (e.g., law-abidance and dutifulness) or agreeableness (e.g., honesty and straightforwardness) may explain a much larger portion of the impression management association with sexuality than do brief, global markers of the Big Five factors, such as those we used.

A third interpretation of the relationship between impression management and sexuality measures is that persons who claim the unlikely virtues measured by the impression-management scale are motivated to regard themselves in an exceptionally unrealistic prosocial manner. The items of the impression management scale may be especially good at identifying a tendency to underacknowledge antisocial thoughts and feelings, and to bias one's recall of communal transgressions. That is, under anonymous response conditions, the impression-management scale measures lack of awareness of one's thoughts, feelings, and behaviors that might be considered socially base. This interpretation of the impression-management scale would suggest that high impression-management scorers are systematically underreporting their sexual feelings and experiences, even in an anonymous research setting. Clearly, these latter two interpretations of the impression-management relationships with sexuality are not mutually exclusive. Some high scorers on the impression-management scale may, in fact, be remarkably blessed with civic virtue. Others may fling cigarette butts from car windows with as much abandon as low scorers, but may have a harder time recalling the act, perhaps because of a stronger desire or need to preserve a propitious self-image.

In conclusion, our results provide modest support for the view that some respondents systematically bias their responses on anonymous sex surveys in a socially desirable direction. On the positive side, the small size of the associations suggests that most of the self-report variance is not biased. Moreover, the restricted patterning of associations between self-deceptive enhancement, impression management, and sexuality measures is theoretically meaningful. That self-deceptive enhancement and impression management were differentially related to subgroups of sexuality measures highlights the importance of using a two-factor approach to assessing influences on socially desirable responding. Our results, however, are limited to

young men and women answering sexuality questions similar to those typically used in survey studies (e.g., Laumann, Gagnon, Michael, & Michaels, 1994). Future research should explore other potentially threatening questions such as those about unsafe sexual practices, use of prostitutes, intravenous drug use, and other dangerous or illegal sexual behaviors.

REFERENCES

- Abramson, P. R. (1973). The relationship of the frequency of masturbation to several aspects of personality and behavior. *The Journal of Sex Research*, 9, 132-142.
- Altemeyer, R. A. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco, CA: Jossey-Bass.
- Andrus, S., Redfering, D., & Oglesby, J. (1977). Attitude, desire, and frequency of extra-marital involvement as correlated with subject characteristics. *Social Behavior and Personality*, 55, 131-136.
- Beck J. G., Bozman, A. W., & Qualtrough, T. (1991). The experience of sexual desire: Psychological correlates in a college sample. *The Journal of Sex Research*, 28, 443-456.
- Bernreuter, R. G. (1933). Validity of the personality inventory. *Personality Journal*, 11, 383-386.
- Buss, D. M. (1994). *The evolution of desire: Strategies of human mating*. New York: Basic Books.
- Catania, J. A., Gibson, D. R., Chitwood, D. D., & Coates, T. J. (1990). Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. *Psychological Bulletin*, 108, 339-362.
- Catania, J., Gibson, D., Marin, B., Coates, T., & Greenblatt, R. (1990). Response bias in assessing sexual behaviors relevant to HIV transmission. *Evaluation and Program Planning*, 13, 19-29.
- Crowne, D. P., & Marlowe, D. A. (1964). *The approval motive*. New York: Wiley.
- Derogatis, L. R. (1978). *Derogatis Sexual Functioning Inventory* (Rev. ed.). Baltimore: Clinical Psychometrics Research.
- Derogatis, L. R., & Melisaratos, N. (1979). The DSFI: A multidimensional measure of sexual functioning. *Journal of Sex and Marital Therapy*, 5, 244-281.
- Eysenck, H. J. (1976). *Sex and personality*. Austin: University of Texas Press.
- Eysenck, J. J., & Eysenck, S. B. C. (1964). *Manual of the EPI*. London: University of London Press.
- Herold, E., & Way, L. (1988). Sexual self-disclosure among university women. *The Journal of Sex Research*, 24, 1-14.
- Joe, V. C., & Kostyla, S. (1975). Social attitudes and sexual behaviors of college students. *Journal of Consulting and Clinical Psychology*, 43, 430.
- John, O. P., Donahue, E. M., & Kentle, R. (1991). *The Big Five Inventory*. Technical report, University of California, Berkeley.
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. Philadelphia: Saunders.
- Lai, J., & Linden, W. (1993). The smile of Asia: Acculturation effects on symptom reporting. *Canadian Journal of Behavioral Science*, 25, 303-313.
- Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (1994). *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.
- Lewontin, R. C. (1995). Sex, lies and social science. *The New York Review of Books*, April.
- McCann, J. T., & Biaggio, M. K. (1989). *Archives of Sexual Behavior*, 18, 59-72.
- McKelvie, M., & Gold, S. R., (1994). Hyperfemininity: Further definition of the construct. *The Journal of Sex Research*, 31, 219-228.
- McKinley, J. C., Hathaway, S. R., & Meehl, P. E. (1948). The Minnesota Multiphasic Personality Inventory. IV. The K scale. *Journal of Consulting Psychology*, 12, 20-31.
- Meston, C. M., & Trapnell, P. D. (1996). [Sexuality and social conservatism.] Unpublished raw data. University of British Columbia, Vancouver, B. C.
- Meston, C. M., Trapnell, P. D., & Gorzalka, B. B. (1996). Ethnic and gender differences in sexuality: Variations in sexual behavior between Asian and Non-Asian university students. *Archives of Sexual Behavior*, 25, 33-72.
- Meston, C. M., Trapnell, P. D., & Gorzalka, B. B. (1998). Ethnic, gender, and length-of-residency influences on sexual knowledge and attitudes. *The Journal of Sex Research*, 35, 176-188.
- Michael, R. T., Gagnon, J. H., Laumann, E. O., & Kolata, G. (1994). *Sex in America*. New York: Little Brown.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, 45, 598-609.
- Paulhus, D. L. (1989). Balanced Inventory of Desirable Responding (BIDR-6). Preliminary unpublished scale, University of British Columbia, Vancouver, Canada.
- Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 17-59). San Diego: Academic Press.
- Paulhus, D. L. (in press). *Manual for Balanced Inventory of Desirable Responding (BIDR-6)*. Toronto: Multi-Health Systems.
- Porter, J. R., Critelli, J. W., & Tang, C. S. K. (1992). Sexual and aggressive motives in sexually aggressive college males. *Archives of Sexual Behavior*, 21, 457-468.
- Simon, A. (1995). Some correlates of individuals' attitudes toward lesbians. *Journal of Homosexuality*, 29, 89-103.
- Simpson, J. A., & Gangestad, S. W. (1989). [Two month test-retest reliability of the Sociosexual Orientation Inventory.] Unpublished raw data, Texas A & M University.
- Simpson, J. A., & Gangestad, S. W. (1991). Individual differences in sociosexuality: Evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology*, 60, 870-883.
- Statistics Canada (1992). Report on the demographic situation in Canada 1991: Current demographic analyses. Ottawa: Statistics Canada.
- Symons, D. (1987). An evolutionary approach: Can Darwin's view shed light on human sexuality? In J. H. Geer and W. O'Donahue (Eds.), *Theories of human sexuality* (pp. 91-122). New York: Plenum Press.
- Taylor, S. E., & Brown, J. (1988). Illusions and well-being: A social psychological perspective. *Psychological Review*, 103, 193-210.
- Trapnell, P. D., & Meston, C. M. (1995). *The Sexual Experiences Inventory (SEI)*. Unpublished manuscript.
- Trapnell, P. D., & Meston, C. M. (1996). *Sex and the five factor model of personality: Nice guys finish last*. Paper presented at the annual meeting of the American Psychological Association, Toronto, Ontario.

Manuscript accepted on 4/15/97.