

A Methodological Review of the Sexual Behavior  
Questions on the 1988 GSS

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In 1988 the General Social Survey (GSS)<sup>1</sup> included for the first time questions on personal sexual behavior. These consisted of items about the number of sex partners during the last year, the relation of these sex partners to the respondent, and the gender of the sex partners (See Appendix 1: Question Wordings). Two factors suggest that these might be problematic questions with potentially a high level of error. First, questions concerning "threatening" topics create discomfort on the part of both respondents and interviewers and prompt respondents to distort their responses in a socially desirable direction (Bradburn, *et al.*, 1979; DeMaio, 1984; Clark and Tifft, 1966). Many respondents report that discussing sexual topics such as masturbation and intercourse on a survey would make most people very uneasy.<sup>2</sup> Likewise, sex surveys report unease on the part of interviewers (Commission, 1971; Johnson and Delamater, 1976). Second, in large part because of the sensitive nature of the topic as discussed above, few national, probability surveys have broached this topic. As a result, there was not a well-established survey tradition to draw upon and little empirical evidence on error structures or how best to ask questions.

#### 1988 Procedures

Given these reasons to anticipate difficulties in the collection of high quality data, special care was taken in the design, administration, and coding of the sexual behavior questions. To minimize distortion from social desirability bias, the sexual behavior questions were placed on a self-completion card. The card was filled-out in privacy by the respondent and then placed in a sealed envelope so the interviewer was not aware of respondent's sexual behavior.<sup>3</sup> In addition, an experiment was carried out using

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<sup>1</sup> The GSS is an annual full-probability survey of adults living in households in the United States. Respondents are interviewed in person and the survey lasts about 90 minutes. Details on the sample and other technical aspects are given in Davis and Smith, 1988.

<sup>2</sup> Masturbation topped the list with 56.4% saying it would make most people very uneasy, followed by Using Marijuana or Hashish (42.0%), Intercourse (41.5%), Using Stimulants or Depressants (31.3%), Getting Drunk (29.0%), Petting or Kissing (19.7%), Income (12.5%), Gambling with Friends (10.5%), Drinking Beer, Wine or Liquor (10.3%), Leisure Time and General Leisure Activities (2.4%), Sports Activities (1.3%) (Bradburn, *et al.*, 1979).

<sup>3</sup> It is generally believed that self-completion gets more truthful reports by reducing social desirability bias (Sudman, 1967; Bradburn and Sudman, 1974) and this has also been found to be the case on NORC's 1970 study of

two different introductions to see which encouraged franker reports (discussed below).

Interviewers received standard NORC training on how to gain respondent cooperation and conduct interviews, general GSS instruction on how to administer the 1988 instruments, and specific guides on handling the self-completed card on sexual behavior. Interviewers' work was checked by standard NORC procedures: supervision by field managers and central office, edit and review of completed questionnaires, crucial question inspection and retrieval, and interview validation. This year because of a related project on cognitive recall, validations were carried out for almost 50% of all cases instead of the standard 10-15%.

Upon receipt at the central office, the data were manually coded and then entered into the computer and cleaned according to usual procedures, utilizing both single and inter column cleaning specifications. After this standard cleaning, the analysis team conducted special data quality checks involving examining all cases showing extreme (but legitimate) values and/or unusual combinations (e.g. married people reporting no sex partners) and the inspection of any verbatim comments by respondents.

Finally, the analysis reported here was conducted to test for measurement error in the data.<sup>4</sup> We discuss 1) non-response bias, 2) the introduction experiment, 3) attitude-behavior consistency, 4) unusual patterns, and 5) differences between the reports of males and females.

#### Non-response Bias

Non-response on the GSS sexual behavior questions comes in three types 1) total or survey non-response, 2) supplement non-response, and 3) item non-response. Survey non-response consists of non-participation in the GSS as a whole. The overall response rate was 77.3%. This is about average for the GSS over the last eight surveys and higher than typical for attitudinal surveys. None of the non-response is believed to be related to the sexual behavior questions, since they made up only about 1 minute of the 90 minute survey and were the very last questions. (For a

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sexual behavior and homosexuality and by Knudsen, Pope, and Irish (1967). Also oral interviews are reported to be more complete or more candid when no third persons are present (Bradburn, et al., 1979; Johnson, 1970). Delamater and MacCorquodale (1975) however first report no difference between oral interviews and self-administration, but then argue that self-completion gets fewer reports of sexual activity which they judge as less accurate.

<sup>4</sup> Substantive reports can be found in Michael, Laumann, Gagnon, and Smith, 1988; Fay, Turner, Klassen, and Gagnon, forthcoming; and Greeley, 1988.

discussion of the general factors related to survey non-response see Smith, 1983; 1984.)

Supplement non-response consists of non-completion of the sexual behavior card. Overall, respondent cooperation on the self-administered questions on sexual behavior was quite high. The sexual behavior supplement was completed by 93.9% of GSS respondents.<sup>5</sup> This completion rate was higher than supplement completion rates for most earlier GSSs and other surveys (Smith, 1986) and above the 90% completion rate targeted at the start of the field period. Much supplement non-response was unrelated to the content of these questions since 47% of the non-respondents had already ended their cooperation when asked to do the preceding International Social Survey Program (ISSP) self-completion module on the impact on the family of the changing role of women.

Item non-response refers to missing data on individual questions. Item completion was quite high. All applicable sexual behavior questions were answered by 86.2% of GSS respondents. One question was unanswered by 3.0% of respondents, while 4.6% did not answer another 2 or more questions ( $93.9\% - 7.7\% = 86.2\%$ ). Much of the item non-response seems to have been inadvertent, involving incorrect following of the skip patterns. Explicit refusals to answer items were very rare.

To assess the likelihood of non-response bias, we compared those who declined to do the supplement vs. those who did at least part of the supplement and those who answered all appropriate items vs. those who failed to answer all questions (i.e. complete plus partial non-respondents). The former comparison considers only supplement non-response, while the latter approach looks at the combined impact of supplement and item non-response.

The first group of items examined in Table 1 includes demographics, attitudes, and behaviors that are most strongly associated with sexual behavior and thus most likely to contribute to supplement and/or item non-response bias. Only one comparison is marginally significant (marital status between complete responders vs. complete and partial non-responders).

The second group shows standard demographics, most which have moderate-to-small associations with sexual behavior. Numerous significant relationships appear, but except for region none of the differences appear in both comparisons. Supplement non-response was higher in the West and lower in the Southeast and New England. Approximately the same pattern occurs in the second comparison when partial non-respondents are included with the complete non-responders. On community type supplement non-response was highest in suburbs of large cities and lowest in non-metropolitan counties with cities of 10,000 or more. No statistically significant

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<sup>5</sup> Or 94.1% when sample weighted for number of adults in the household. In general we found that this adjusted made only small differences here and in other instances.

variation occurs when partial non-response is added in. While both survey non-response in general and supplement non-response in particular are typically related to region and community type, the usual pattern is for response to be higher in rural communities and regions and lowest in central cities and urbanized regions (Smith, 1983; 1984; 1986). The results here do not follow this pattern and we have no ready interpretation for these differences.

When partial non-response is included, significant differences occur for education and race. Non-response is higher for the less educated and for blacks and we suspect that errors in following the skip pattern by these groups may have produced these related differences.

The third group includes variables that were found to be significantly related to supplement non-response in earlier research (Smith, 1986). Unlike the earlier research, non-response was not found to be related to sociability. It was however related to general cooperativeness (in terms of the interviewer's overall rating of respondent's cooperation and willingness to report income).<sup>6</sup> For example, while 95% of those reporting family income did the supplement only 75% of those refusing to report income did the supplement. Non-response was also related to low political interest (reporting no political ideology and saying DK to a scale of 18 attitude questions). For example, while 95% of those with a political ideology did the supplement, only 80% of those without any identification did the supplement. These patterns held up both for supplement non-response and supplement plus item non-response.

In general, the non-response does not appear to be related to differences in sexual behavior. Non-response differentials appear to be absent among those variables most closely related to sexual behavior. Non-response instead is related to general factors such as low education, low political interest, and general uncooperativeness that are not highly related to sexual behavior. As a result, non-response bias to the supplement appears to be negligible.

### Introduction Experiment

Two introductions were used to the sexual behavior questions. The standard introduction made a simple promise of confidentiality, while the AIDS introduction mentioned the questions connection to AIDS and urged "frank and honest responses (Appendix 1: Question Wording)." Each introduction appeared at the top of the self-completion card and was administered to a random half of the sample. It was hypothesized that by giving a strong rationale for the sexual behavior items the AIDS introduction would garner more truthful reports. It was also considered possible, however, that reminding respondents of the connection between sexual behavior and

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<sup>6</sup> However, interviewer's ratings of cooperation are not necessarily independent of respondent's decision to do the self-completion supplement.

AIDS might lead those engaging in risky behavior to deny such practices.<sup>7</sup> As Table 2 indicates, however, there were no statistically significant impacts of the introduction variation on reports of sexual behavior. The AIDS introduction did yield marginally more permissive responses (except for bi/homosexuality) and had a similar, slim advantage in supplement completion.

This might be optimistically interpreted to mean that respondents were willing to make truthful and accurate reports even without the AIDS-related appeal for frankness and honesty or pessimistically that despite that appeal respondents still did not fully report behaviors that they might deem as socially undesirable. Alternatively, it might be that the AIDS introduction encouraged truthfulness in some and denial in others with equal and off-setting effects.

### Attitude-Behavior Consistency

The GSS traditionally includes three items on sexual morality—whether homosexual, premarital, or extramarital relationships are wrong. Table 3 shows the relationship between these attitudes and sexual behavior. In general, there is some congruence between sexual morality and sexual behaviors. The most substantial association is the increasing number of never married respondents who have had one or more sexual partners during the last year as moral opposition to premarital relations declines. Among those who felt that premarital relations were Always Wrong 45.5% reported partners, while among those who said such relations were Not Wrong at All 82.5% reported sex partners. For both extramarital and homosexual relations, there are similar, but more modest associations.

On one hand the congruence between levels of support for various forms of sexual morality and reported sexual behaviors is reassuring. In fact, the level of congruence reported here seems to be comparable to that found on comparisons involving much less sensitive behaviors (Schuman and Johnson, 1976; Schuman, 1972). On the other hand, a number of people report behaviors that do not seem to correspond to their expressed attitude. For example, among the never married who say that premarital sex is Always Wrong 45.5% report having had sex partners during the last year. There are of course many ways in which such discrepancies can be resolved. For example, never married people who say that premarital sex is Always Wrong yet who report having had sex partners during the past year could either be engaging in behavior they still feel is wrong or they may even judge such behavior as wrong because of their actions over the last year.

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<sup>7</sup> The only literature at all related to this issue is the finding that stronger pledges of confidentiality lead to lower item non-response on sexual behavior items (Bradburn, 1979).

## Unusual Patterns

As part of the special cleaning procedures conducted by the analysis team, we examined numerous patterns that on their face seem incongruent and which represented atypical combinations. In some cases errors in coding or data entry were discovered and corrected and in other instances verbatim remarks or other data indicated that the cases were correct. For example, one person reported three partners, but indicated having only had as a partner a "husband or wife or regular sexual partner". Verbatims indicated that each partner was the respondent's regular sexual partner "at the time". Here we discuss two of the many unusual patterns that we examined: married respondents reporting no sexual partners and homosexuals married to females.

Overall 8.7% (68) of all married respondents reported no sex partners. The most distinguishing characteristic of this group was its age. Two-thirds were over 60 years old and over a third was 70+. Among the 23 married respondents 60 or younger 5 reported that their marriages were "Not Too Happy" (22% compared to only 3% of all married respondents). Of the remaining 18, 10 were asked to rate their health and three said they were is less than good health. That left 8 who reported their marriage was either very or pretty happy and who were not asked the health question and 7 who said their marriage was at least pretty happy and that their health was good or excellent. (Only two said that their marriages were very happy and that their health was excellent.) Thus, most of the celibate married respondents were old, not in good health, or unhappy in their marriages. Given the possibility of health problems on the spouse's part and among those not asked that question there are probably less than 10 married respondents who are 60 or younger, in good health (and with spouses in good health), at least pretty happy in their marriage, and celibate. In effect, we find that the there are possible explanations for about 85% of the "sexless" marriages.

Among the 17 homosexuals or bisexuals (14 male homosexuals, 2 male bisexuals, 1 female homosexual), 9 reported being never married, 2 as widowed, and 6 as married. Based on verbatim remarks, responses to the attitude question on homosexuality, and information on the listings of household members, the 11 unmarried or widowed respondents do appear to be homo/bisexuals. The 6 male homosexuals who are married do not show other signs of being homosexuals however. Each has a female spouse present in the household, have had 2+ children, only one sex partner who is their spouse or regular sex partner, and of the five asked the homosexual attitude question all said it was Always Wrong. In addition comprehension was rated as good for each respondent and there is no other indication that they may have misread or misunderstood the question on gender of sex partner. Whether we have six cases in which respondents circled the wrong response to the gender of sex partners question, six cases of homosexuals who have not come "out of the closet" and admit to their true sexual orientation only on the confidential, self-completion card, or some

combination is unknown.

### Male/Female Discrepancies

Among all male heterosexuals the mean number of partners reported was 1.87, while female heterosexuals reported only 0.97 partners. Among heterosexuals for each female partner that a man has a woman has a male partner. Thus the number of heterosexual partners for women should be equaled by the number of heterosexual partners for men. Instead of parity we find that the ratio of male-reported partners to female-reported partners is 1.92:1 (Table 5). If we adjust for the greater number of females than males over 18 then the ratio falls to 1.72:1. Further adjustments must be made for partners who were not in the universe covered (adult Americans living in households). Chief among the groups that might be sex partners of adult Americans would be youths in their teens. Another possible group would be foreigners. There is some evidence on both the proportion of men and women under 18 who are sexually active and the proportion married, but there is no evidence on the age of sex partners of youths under 18. Based on the fact that women tend to both date and marry men slightly older than they are and based on the number of sexually active youths, we came up with the crude estimate that the number of females under 18 with male sex partners over 18 minus the number of males under 18 with female sex partners over 18 is 1 million. Assuming that these "extra" female had an average of 1.42 partners (the mean for females 18-24), that would account for 1,423,000 of the partners reported by males on the GSS. Adding in a totally made-up 500,000 net edge of females partners vs. male partners who are foreigners or otherwise out of sample would lower the number of in-scope female partners by 1,923,000. These adjustments only marginally close the male/female gap to 1.695:1.

One possible explanation is that female prostitutes are entirely missed by the GSS. Adding just one female with 200 male partners would lower the male/female ratio to 1.34:1 and two such respondents would nearly close the gap (1.11:1). If however we look at the number of female prostitutes reported by males on the GSS and remove these partners from the reports, we lower the male mean only from 1.87 to 1.83 (using assumptions that maximized the estimated number of prostitutes). Using that mean reduces the final adjusted male/female ratio to only 1.66:1.<sup>8</sup>

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<sup>8</sup> Adopting the two prostitute hypothesis would mean that 31% of all partners of males would be prostitutes. This is hardly a believable figure. In addition since males actually reported only very slight use of prostitutes, we would either have to believe that males were reporting almost none of their traffic with prostitutes or that they were reporting sexual partners who were prostitutes, but misdescribing them as representing some other type of relationship (e.g. pick-up, friend, etc.). If they were



Of the numerous other possible explanations for the discrepancy the most likely might be some combination of male overreporting and female underreporting. Past studies of sexual behavior present mixed support for this explanation however. Studies of independent reports of frequency of marital intercourse by husbands and wives produce highly similar mean estimates (Clark and Wallin, 1964). Analysis of item non-response and the use of a candor scale on the 1970 Pornography Commission survey suggested that male reports were more candid and complete than those of females (Commission, 1971), while a small panel study of teens found females more consistent in their reports of being sexually active (Newcomer and Udry, 1976). However, neither on NORC's 1970 survey on sexual behavior (NORC, 1987) nor in the GSS did interviewers' evaluation of either general frankness or cooperativeness related to gender. Thus, the common sense assumption of male boasting and female modesty that might explain the GSS differences is not clearly supported by the few studies that might be relevant.

A second literature suggests that more candid reports are given when the interviewer is the same gender as the respondent.<sup>9</sup> Since almost all NORC interviewers are female, that should have encouraged females to give more truthful reports. This of course does not seem to be the case given the differences between males and females in the aggregate figures. The self-completion format of the sex behavior questions may have negated any gender interaction effect however.

In brief, nothing in the extant literature suggests a strong candidate for the gender discrepancy observed in the data. Of various possible explanations some combination of underrepresentation of female prostitutes and of female underreporting and male overreporting seems most plausible.

### Conclusion

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were not reporting partners who were prostitutes, then we would have to add these figures to the male mean and the male-female differential would widen again. If men misreport the nature of their relationship to paid partners, then not only are the female means off because of the non-representation of prostitutes, but the male sexual relationship data would be dramatically changed.

<sup>9</sup> This literature is far from consistent on finding more truthful report when gender are matched. In a number of instances no effect has been observed. See Commission, 1970; Johnson and Delamater, 1976; Reiss, 1967; Darrow, et al., 1974; Delamater, 1974; Benney, Riesman, and Star, 1956.

The sexual behavior data on the 1988 GSS pass some methodological tests, but fail others. On the positive side, there is little evidence of non-response bias, some consistency between attitudes and behaviors, plausible explanations for "sexless" marriages, and strong confidence in both interview validity and data processing reliability because of the extensive checks employed. On the negative side, many of the male homosexual cases are questionable and male/female reports on numbers of sex partners are incompatible. These results call for caution in the use of the sexual behavioral data and additional developmental work on the best way to ask sexual behavior items.

Table 1

Difference Between Respondents and  
Non-Respondents to the Sexual  
Behavior Questions  
(prob.)<sup>10</sup>

	Did Supplement/Did Not Do Supplement	Did All Parts/Did Not Do All Parts
Gender	.777	.392
Marital Status	.594	.042
Approve of Premarital Sex	.699	.479
Approve of Homosexual Sex	.300	.166
Approve of Extra- marital Sex	.211	.699
Seem X-rated Movies	.887	.169
Legalize Pornography	.793	.844
Age	.090	.398
Race	.231	.003
Educational Degree	.280	.007
Region	.002	.005
City Type	.002	.079
Visit with friends	.806	.041
Visit with neighbors	.094	.087
Visit with family	.969	.707
Refused income	.000	.000
Gave DKs	.000	.000
Rated as Cooperative	.000	.000
Politically Oriented	.000	.026

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<sup>10</sup> Probabilities were calculated using SRS assumptions. Since finding differences between the respondents and supplement non-respondents is undesirable, we are being conservative by not adjusting for design effects.

Table 2

Reports of Sexual Behavior  
by Experimental Introduction

	Introduction		
	<u>Standard</u>	<u>AIDS</u>	<u>Prob.</u>
Did supplement	93.2%	94.5%	.343
Bi/Homosexual	2.0%	1.3%	.643
2+ partners	13.9%	14.5%	.244
Unfaithful (married only)	4.7%	4.8%	.660
Had sex partner who was casual date/pick up (of those who have other than only one regular partner)	35.4%	53.3%	.054
Mean # partners	1.2	1.6	.083

Table 3

Sexual Behavior Compared to Sexual Morality Attitudes

Premarital Relations (PREMARSEX) - Never married Only

	Mean # Partners	% 1+ Partners
Attitude towards		
Always Wrong	1.63	45.5 (29)
Almost Always Wrong	2.41	68.7 ( 9)
Sometimes Wrong	3.97	81.5 (49)
Not Wrong at All	2.47	82.5 (113)

Extramarital Relations (XMARSEX) - Currently Married Only

	Mean # of Partners	% Unfaithful
Attitudes towards		
Always Wrong	0.96	3.7 (463)
Almost Always Wrong	2.19	3.7 ( 57)
Sometimes Wrong/Not at All	1.14	9.1 ( 21)

Homosexual Relations (HOMOSEX) - All Respondents

	% Homo/Bisexual
Attitudes towards	
Always Wrong	1.0 (657)
Almost Always Wrong	0.0 ( 36)
Sometimes Wrong	2.2 ( 47)
Not Wrong at All	2.3 (115)

Table 4

## A Comparison of Male/Female Reports of Number of Partners

	Males	Females	M:F Ratio
Population 18+	83,159,000	90,835,000	
Proportion Heterosexual	.975	.999	
Heterosexuals 18+	81,113,000	90,717,000	
Mean Number of Partners	1.87	0.97	1.92:1
Total Partners	151,560,000	88,260,000	1.72:1
# Partners - Net Youths	150,137,000	88,260,000	1.70:1
# Partners - All Out of Sample	149,637,000	88,260,000	1.695:1

Appendix 1: Question Wordings

Introduction X: Now we would like you to answer some additional questions. Your answers are confidential and will be used only for statistical reports.

Introduction Y: There is a great deal of concern today about the AIDS epidemic and how to deal with it. Because of the grave nature of this problem, we are going to ask you some personal questions and we need your frank and honest responses. Your answers are confidential and will be used only for statistical reports.

1. How many sex partners have you had in the last 12 months?
2. Was one of the partners your husband or wife or regular sexual partner?
3. If you had NO other partners besides your husband or wife or regular sexual partner, PLEASE GO TO Q.4.

If you had other partners, please indicate all categories that apply to them. **CIRCLE ALL THE ANSWERS THAT APPLY.**

Close personal friend  
Neighbor, co-worker, or long-term acquaintance  
Casual date or pick-up  
Person you paid or paid you for sex  
Other (PLEASE SPECIFY)

4. Have your sex partners in the last 12 months been.....  
**PLEASE CIRCLE ONE ANSWER.**

Exclusively male  
Both male and female  
Exclusively female

5. THANK YOU FOR YOUR COOPERATION. PLEASE PLACE FORM IN ENVELOPE, SEAL IT, AND GIVE TO THE INTERVIEWER.

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