# Sex Differences in How Heterosexuals Think About Lesbians and Gay Men: Evidence From Survey Context Effects 

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The Journal of Sex Research, in press (1999).

AUTHOR NOTE. This paper is dedicated to the memory of Karen Garrett, who made the data collection for this and our earlier survey projects both possible and enjoyable. The research described in this paper was supported by grants to the first author from the National Institute of Mental Health (R01 MH55468 and K02 MH01455). We thank Jon Krosnick for his helpful comments on an earlier version of this paper. We also thank the staff of the Survey Research Center, University of California at Berkeley, for their assistance throughout the project. Requests for reprints should be sent to Gregory M. Herek, Department of Psychology, University of California, 1 Shields Avenue, Davis, CA 95616-8775.


#### Abstract

Two experiments were embedded in a 1997 telephone survey of US households to assess possible differences in how heterosexuals think about lesbians versus gay men. In each experiment, one half of the sample first responded to one or more attitude items about lesbians, followed by comparable items about gay men. The other half received the gay male item(s) first. Results are reported separately for White ( $N=976$ ) and Black $(N$ $=479)$ heterosexuals. For White and Black men alike, self-reported attitudes toward lesbians tended to be more favorable when they were assessed without reference to gay men (i.e., lesbian items presented first). White


men's reactions to gay men tended to be less negative when assessed after the questions about lesbians were presented, but Black men's responses did not consistently show this pattern. For some items, women gave more favorable ratings of lesbians and less favorable ratings of gay men when the lesbian items were presented first. The findings suggest possible gender differences in the cognitive organization of heterosexuals' attitudes toward lesbians and gay men.

Meta-analyses of the research literature on heterosexuals' attitudes toward homosexuality indicate that heterosexual men and women react differently to homosexuality. Heterosexual men generally manifest higher levels of sexual prejudice (i.e., negative attitudes toward homosexual persons) than do heterosexual women. This difference results mainly from heterosexual men's attitudes toward homosexual men, which are consistently more negative than both their attitudes toward lesbians and heterosexual women's attitudes toward either lesbians or gay men (Kite, 1984; Kite \& Whitley, 1996). Although much of the research upon which this conclusion is based was conducted with convenience samples of college students, the finding has been replicated in at least one national probability sample (Herek \& Capitanio, 1996) for White (but not Black) respondents (Herek \& Capitanio, 1995).

Various explanations have been offered for this pattern, including differential demands on
men and women created by gender roles (Herek, 1986; Kite \& Whitley, 1998), sex differences in levels of defensiveness and threat associated with homosexuality (Herek, 1986, 1988), unequal opportunities for interpersonal contact with lesbians and gay men (Herek \& Capitanio, 1996), and the eroticizing of lesbians by heterosexual men (Louderback \& Whitley, 1997). These explanations all imply that heterosexual men and women think differently about homosexuality, and that their thinking is nuanced according to whether the attitude object is gay men or lesbians (for a general discussion, see Kite \& Whitley, 1998).

Previous empirical research has been limited in its ability to identify and explain these gender differences for at least two reasons. First, many studies have used measurement methods that are incapable of detecting differences in heterosexuals' reactions to lesbians and gay men. ${ }^{1}$ Although numerous survey and questionnaire studies have measured heterosexuals' attitudes and opinions related to homosexuality (for reviews, see Herek, 1984, 1991, 1994, 1997; Kite, 1984; Kite \& Whitley, 1996; Yang, 1997), most have framed their target in ostensibly gender-neutral terms, typically using words such as homosexual (or, in some cases, gay) to encompass both gay men and lesbians. Not only does this approach preclude separate analysis of attitudes toward lesbians versus gay men, but many heterosexuals may interpret homosexual as referring exclusively to gay males (Black \& Stevenson, 1983; Kite \& Whitley, 1998). Some researchers have phrased their questions to refer to "gays and lesbians" or "gay men and lesbians," a practice that explicitly includes attitudes toward lesbians but still does not permit their separate analysis. Relatively few studies have assessed attitudes toward lesbians separately from attitudes toward gay men, and such distinctions have been particularly rare in studies utilizing probability samples. In Yang's (1997) review of 77 different questions about homosexuality used in public opinion polls, for example, only two items distinguished reactions to lesbians from reactions to gay men. ${ }^{2}$ Thus, most research
methodology has been based on the premise that heterosexuals' attitudes toward gay men and toward lesbians are psychologically equivalent and can be subsumed in the general category of "attitudes toward homosexuals."

A second limitation of past research is that studies that have examined sex differences in heterosexuals' attitudes have focused mainly on the structure of attitudes. They have assessed correlations between men's and women's attitudes toward lesbians and gay men, on the one hand, and various attitudes and personality traits, on the other (e.g., Herek, 1988; Kite, 1994; Louderback \& Whitley, 1997). This approach has been useful for identifying consistent attitude-attitude and attitude-trait relationships, for example, between sexual prejudice and support for traditional gender roles or authoritarianism. It is limited, however, because it treats attitude structure as a relatively static phenomenon (Judd, Drake, Downing, \& Krosnick, 1991).

An alternative approach is to focus instead on dynamic processes occurring while a heterosexual person thinks about homosexuality. One way to observe such processes is to examine context effects in survey responses to items about lesbians and gay men. By context effects, we refer here to differences in response patterns that occur as a result of the order in which questions are asked in a structured interview (see generally Schwarz \& Sudman, 1992). Although context effects in survey research were once regarded mainly as methodological artifacts, more recent studies have used them to understand the nature of attitudes in specific domains and the cognitive processes underlying them (Schwarz \& Sudman, 1992).

Much of this research has been based on a conceptualization of attitudes as long-term memory structures which are activated when an attitude object is encountered or when a person is questioned about her or his opinions (Judd et al., 1991; Tourangeau \& Rasinski, 1988). Within this framework, accurately reporting one's own attitudes (e.g., in response to a survey question) requires successfully activating the relevant
attitude, retrieving its contents, synthesizing this information, and reporting an answer (Strack \& Martin, 1987; Tourangeau \& Rasinski, 1988). A variety of factors can hinder or facilitate this process (Krosnick, 1991).

One implication of this approach is that attitudes can be understood as parts of cognitive associative networks. When an attitude is activated, the activation spreads to other, linked attitudes within the network. Consequently, simply asking a question about one attitude object can affect self-reports of attitudes toward related objects and issues. Context effects, therefore, can reveal information about dynamic aspects of attitudes - including ongoing processes such as judgment, activation, and information retrieval - in contrast to the more static information about attitude structure that results from measuring intercorrelations among different attitudes (Judd et al., 1991).

In the present study, we examined context effects in survey responses in an attempt to shed new light on how heterosexual men and women think about gay men and lesbians. In brief, we randomized the order in which respondents were asked identically-structured questions about lesbians and about gay men, so that one half of respondents received the lesbian items first whereas the other half received the gay male items first. This procedure allowed us to compare heterosexuals' attitudes toward lesbians in their own right (i.e., when the lesbian items were presented first) with attitudes toward lesbians in a situation that implicitly associated them with gay men (i.e., when the lesbian items were presented after comparable questions about gay men). It also allowed a similar comparison for attitudes toward gay men. The data were collected in a 1997 national telephone survey about AIDS-related attitudes and beliefs, which included items about attitudes toward homosexuality.

We selected two techniques for assessing heterosexuals' attitudes that have been used in previous survey research - feeling thermometers (Experiment 1) and a series of statements about lesbians and gay men presented in agree-disagree format (Experiment
2) - and created two split-ballot experiments within a survey protocol. This multi-measure approach allowed us to assess not only whether context effects occurred, but also whether they were obtained with different assessment techniques. If significant effects were observed only with one measurement strategy, it would suggest that the effect is specific to that technique. If context effects were observed across measurement methods, it would indicate a more general pattern of differences in how heterosexuals think about lesbians or gay men.

We operationally defined a context effect as a statistically significant difference in responses to an item according to its order of administration, for example, significantly different feeling thermometer ratings for lesbians by heterosexual male respondents according to whether the lesbian thermometer was administered first or after the gay male thermometer. We did not make predictions about the direction of context effects, except that we were alerted by previous research (e.g., Herek \& Capitanio, 1995; Kite \& Whitley, 1996, 1998) to construct our analyses to explicitly compare responses according to the sex of the respondent and the sex of the attitude object, and to consider the possibility that Blacks and Whites would show different response patterns.

## Method

## Sample

A national cross-section sample (hereafter referred to as the primary sample) was drawn from the population of all English-speaking adults (at least 18 years of age) residing in households with telephones within the 48 contiguous states ( $N=1309$ ). Ten-digit telephone numbers were generated using a list-assisted Random Digit Dialing (RDD) procedure (Casady \& Lepkowski, 1993). This method resulted in 2,009 eligible households ( $55.8 \%$ of the 3,603 numbers initially generated by the procedure). Of these, interviews were completed with 1,309 (1,246 totally completed and 63 partially completed), yielding a final response rate of $65.1 \%$.

An additional oversample of 403 individuals
who described their own race or ethnicity as Black or African American was also recruited. For the oversample, an initial set of telephone numbers was cross-referenced with another list based on the Current Population Survey, which identified telephone exchanges that were linked to census tracts with at least $15 \%$ Black households. This method resulted in 3,230 telephone numbers, from which 638 (19.8\%) were determined to be eligible household phone numbers. Interviews were completed with 403 (369 totally completed, 34 partially completed), yielding a response rate for the oversample of 63.1\%.

## Interview Procedure

Interviews were conducted by the staff of the Survey Research Center at the University of California at Berkeley between September of 1996 and March of 1997, using their computerassisted telephone interviewing (CATI) system. No limit was set on the number of recontact attempts for each telephone number. Upon reaching an adult in the household, the interviewer enumerated the first name and race of each person 18 years or older living in the household. The target respondent was selected at random from the household list. The median duration of the interview was 44 minutes (for additional information about the survey methodology, see Capitanio \& Herek, 1999; Herek \& Capitanio, 1999).

## Measures

Two sets of interview items directly assessed attitudes toward lesbians and gay men.

Experiment 1: Feeling thermometers. Near the beginning of the survey, respondents were administered a series of 101-point feeling thermometers similar to those widely used in previous survey and laboratory research (e.g., Haddock, Zanna, \& Esses, 1993; Sapiro, Rosenstone, \& Miller, 1998). Higher ratings indicate warmer, more favorable feelings toward the target whereas lower ratings indicate colder, more negative feelings. To familiarize them with the format, all respondents were first asked to rate their warmth or favorability toward "Democrats," then "Republicans." Next, one
half of the respondents were randomly assigned to a group that was asked to rate "men who are homosexual," followed by "women who are lesbian, or homosexual." The remaining half of the sample received the two items in the opposite order.

Experiment 2: Attitudes Toward Lesbians and Attitudes Toward Gay Men scale items. In the latter one-third of the interview, respondents were asked their level of agreement or disagreement with four statements about lesbians and four parallel statements about gay men. The gay male items (with lesbian wordings in brackets) were (1) "Sex between two men [women] is just plain wrong" (the WRONG item); "I think male homosexuals [female homosexuals or lesbians] are disgusting" (DISGUST); "Male [female] homosexuality is a natural expression of sexuality in men [women]" (NATURAL); and "A man who is homosexual [A woman who is a lesbian] is just as likely to be a good person as anyone else" (GOOD). The WRONG, DISGUST, and NATURAL items comprise the short forms of the Attitudes Toward Gay Men (ATG) and Attitudes Toward Lesbians (ATL) scales, whose psychometric properties are well established (Herek, 1994). The GOOD item was added to each series for the present study to balance the number of positively- and negatively-worded items. Although it is a new item, it is included below in references to the ATL and ATG items.

All items were administered with four response alternatives (agree strongly, agree somewhat, disagree somewhat, disagree strongly). One half the sample was randomly selected to receive the ATL items first. The other half received the ATG items first. ${ }^{3}$ Randomization of ATL and ATG items was independent of randomization of the feeling thermometers.

Sexual orientation. Respondents' sexual orientation was assessed with the following item: "Now I'll read a list of terms people sometimes use to describe themselves: heterosexual or straight, homosexual, gay, lesbian [for women respondents only]; and bisexual. As I read the list again, please stop me when I get to the term
that best describes how you think of yourself." ${ }^{\text {4 }}$

## Results

## Sample Characteristics

Of the 1309 respondents in the primary sample, $45 \%$ were male and $55 \%$ were female. The primary sample was $79 \%$ non-Hispanic White, $11 \%$ non-Hispanic Black, 5\% Hispanic, $2 \%$ Asian, and $1 \%$ Native American. Respondents ranged in age from 18 to 93 years, with a mean age of 44 (s.d. $=16$ ). Median annual household income was between $\$ 40,000$ and $\$ 50,000$, with $16 \%$ reporting income of less than $\$ 20,000$, and $18 \%$ reporting income of $\$ 70,000$ or more. The median educational attainment was some college or post-secondary schooling. A majority of the sample was married ( $52 \%$ ) or had previously been married ( $7 \%$ widowed, $3 \%$ separated, $12 \%$ divorced). Another 5\% reported that they were not legally married but were currently living in a marriagelike relationship, and $17 \%$ had never been married. Roughly two-thirds of respondents (68\%) were currently employed.

Of the 403 respondents in the Black oversample, $40 \%$ were male and $60 \%$ were female. Respondents ranged in age from 18 to 85 years, with a mean age of 41 (s.d. $=14$ ). Median annual household income was between $\$ 20,000$ and $\$ 30,000$, with $27 \%$ reporting income less than $\$ 20,000$, and $9 \%$ reporting income of $\$ 70,000$ or more. The median educational attainment was "high school graduate." Slightly more than half of the sample was married (30\%) or had previously been married (5\% widowed, $6 \%$ separated, $15 \%$ divorced). Another $9 \%$ reported that they were not legally married but were currently living in a marriage-like relationship, and $26 \%$ had never been married. Nearly two-thirds of respondents (63\%) were currently employed.

## Racial Comparisons

Based on previous findings that Black and White heterosexuals differ in their attitudes toward gay men and lesbians, with attitude differences between Black heterosexual men and women less pronounced than among Whites
(Herek \& Capitanio, 1995), we analyzed responses separately for these two groups. Because the sample did not include sufficient numbers of Hispanics, Asian-Americans, or other minority racial and ethnic groups to permit meaningful statistical analysis, these groups are excluded from the analyses presented below. Thus, results are reported here for Whites (based on all Whites in the primary sample, $n=$ 1,037 ) and Blacks (based on all Blacks in the primary sample combined with the oversample, $n$ $=139+403=542) .{ }^{5}$ In addition, respondents who did not self-identify as heterosexual (i.e., those coded as gay, lesbian, bisexual, don't know, or refused) were dropped from the analyses, leaving $n$ s of 976 Whites and 479 Blacks. All analyses presented here used unweighted data.

## Experiment 1: Feeling Thermometers

When asked to rate their feelings toward gay men first, Whites' feeling thermometer scores displayed the sex difference commonly observed in previous research (Kite \& Whitley, 1996), with men's ratings lower (less favorable) than those of women (Table 1, Sections 1 and 2). This difference largely disappeared when the lesbian thermometer was presented first, however, mainly due to men's higher (more favorable) ratings of both gay men and lesbians in that condition.

Insert Table 1 about here

We used multivariate analysis of variance (MANOVA) to assess the reliability of this pattern, with scores for the two thermometers entered as dependent variables. The analysis yielded a significant multivariate effect for respondent sex (Wilks' Lambda $[\Lambda]=0.96, F$ $(2,961)=19.80, p<.001$; effect size $[\mathrm{ES}]=$ .04) but no main effect for item order. Univariate tests indicated that heterosexual women overall expressed significantly less hostile attitudes than did heterosexual men on both the gay male thermometer, $F(1,962)=20.81(p<.001)$, and the lesbian thermometer, $F(1,962)=8.17(p<$
$.01)$. The effect was more than twice as strong in attitudes toward gay men ( $\mathrm{ES}=.021$ ) compared to attitudes toward lesbians (ES = .008).

This difference, however, was qualified by the significant Sex $\times$ Order interaction $(\Lambda=0.99$, $F(2,961)=3.65, p<.05 ; \mathrm{ES}=.008)$ for both the gay male thermometer, univariate $F(1,962)$ $=6.17$ ( $~ .05$; $\mathrm{ES}=.006$ ), and the lesbian thermometer, univariate $F(1,962)=7.28(p<$ .01 ; $\mathrm{ES}=.008$ ). Tests of simple main effects revealed that the effect of item order was significant for male respondents $(\Lambda=.99, F(2$, $962)=4.46, p<.05$ ), but not for female respondents. Univariate tests for males' responses were significant for the lesbian thermometer, $F(1,963)=6.23(p<.05)$ but not for the gay male thermometer.

Thus, White heterosexual men rated lesbians higher (more favorably) if they received the lesbian thermometer first, but lower (more negatively) if they received the gay male thermometer first. They also rated gay men more favorably if they received the lesbian thermometer first, but the effect was not statistically significant.

Blacks showed an effect similar to Whites (Table 1, Sections 3 and 4). Black men's ratings for both targets were substantially higher when the lesbian thermometer was presented first. Indeed, in the latter condition, men's ratings for lesbians were significantly more favorable than those of women. MANOVA yielded a significant multivariate effect for item order ( $\Lambda$ $=0.98, F(2,467)=5.47, p<.01 ; \mathrm{ES}=.023)$ and respondent sex $(\Lambda=0.94, F(2,467)=15.86, p$ < .001; $\mathrm{ES}=.064$ ). Univariate tests indicated that men gave significantly lower thermometer scores to gay men than did women, $F(1,468)=$ 5.98 ( $p<.05$; $\mathrm{ES}=.013$ ), but the groups did not differ significantly in their ratings of lesbians. Univariate tests for order of presentation did not yield significant results.

The main effects were qualified by the significant Sex $\times$ Order interaction ( $\Lambda=0.98, F$ $(2,467)=5.10, p<.01$; $\mathrm{ES}=.021)$ for both the gay male thermometer, univariate $F(1,468)=$
$5.40(p<.05 ;$ ES $=.011)$, and the lesbian thermometer, univariate $F(1,468)=9.12(p<$ .01 ; $\mathrm{ES}=.019$ ). As with the White respondents, the order effect was evident for Black men ( $\Lambda$ $=.97, F(2,468)=6.92, p<.001)$ but not Black women. The univariate tests for men's responses were significant for both the gay male thermometer, $F(1,469)=3.81(p=.05)$, and the lesbian thermometer, $F(1,469)=9.65(p<.01)$.

Thus, like their White counterparts, Black heterosexual men rated lesbians higher (more favorably) if they received the lesbian thermometer first, but lower (more negatively) if they received the gay male thermometer first. They also gave gay men significantly higher ratings if the lesbian thermometer was administered first.

## Insert Figure 1 about here

These patterns are graphically illustrated in Figure 1. In each panel, the shaded bar (male respondents' ratings) is higher when the lesbian thermometer was administered first, compared to when the gay male thermometer came first. In contrast, women's responses (white bars) did not shift noticeably as a consequence of item order. Figure 1 also makes its clear that sex differences in attitudes were considerably greater when the gay male items were administered first. In panels $1-1$ and 1-3 (ratings of gay men), the differences between the first pair of bars (gay male thermometers presented first) are noticeably larger than the differences between the second two bars (lesbian thermometers presented first). In panels 1-2 and 1-4 (ratings of lesbians), differences between the first pair of bars (lesbian thermometers presented first) are either negligible or in the opposite direction, compared to differences between the second two bars (gay male thermometers presented first).

Experiment 2: ATG and ATL Items

## White Respondents

Table 2 reports percentages of agreement for White respondents for the four ATG and ATL
items, broken down by sex of respondent and item order. The magnitude of the order effect for women and men is summarized in the columns labeled "Difference," which report differences in percentage of agreement by item order. A positive difference indicates more agreement with the item (e.g., a higher proportion agreeing that male-male sex is wrong) when the gay male series was presented before the lesbian series. A negative difference indicates less agreement when the gay male series was presented first.

Insert Tables 2 and 3 about here

The order effect for White men was significant for WRONG and DISGUST, items for which agreement meant endorsing an antigay statement. On these items, men rated lesbians significantly less negatively when the lesbian series was presented first. The differences between conditions were 23.2 points for $W R O N G, \mathrm{X}^{2}(1, n=424)=23.13(p<.001)$, and 15.1 points for $\operatorname{DISGUST}, \mathrm{X}^{2}(1, n=422)=9.75$ ( $p<.01$; all tests two-tailed). ${ }^{6}$ In addition, fewer White men said that male homosexuality is wrong or disgusting when the lesbian series was presented first, although the difference was statistically significant only for the WRONG item, $X^{2}(1, n=424)=4.04(p<.05)$. No significant order effects were obtained for White men for the NATURAL or GOOD items.

For White women, the results were less clear-cut. When they answered the lesbian series first, significantly fewer rated femalefemale sex as wrong than when the ATG items came first: $54.2 \%$ versus $64.4 \%, X^{2}(1, n=540)$ $=5.81(p<.05)$. Moreover, when the lesbian series came first, fewer women agreed that male homosexuality is natural, $\mathrm{X}^{2}(1, n=530)=8.42$ ( $p<.01$ ). Fewer women in this condition also said that a lesbian is as likely as anyone else to be a good person, compared to when the gay male items were presented first, $\mathrm{X}^{2}(1, n=542)$ $=4.18(p<.05)$. Because more than $90 \%$ of the women in both conditions agreed with the $G O O D$ item, however, this difference is difficult
to interpret.

Insert Figures 2, 3, and 4 about here

Whites' response patterns for the WRONG, DISGUST, and NATURAL items are graphically displayed in the first two panels of Figures 2, 3, and 4 , respectively. The shaded bars (men's responses) in Figures 2 and 3 are noticeably higher (more agreement) when the gay male items were presented first. The same pattern is evident for the white bars (women's responses) in Panel 2-2 (Figure 2), the lesbian WRONG item. Panel 1 of Figure 4 shows that women's agreement that male homosexuality is natural was higher when the gay male items came first.

Figures 2, 3, and 4 show the shifting patterns of sex differences, depending on item order. The first pair of bars in Panel 2-1 of Figure 2 shows that significantly more White men than women agreed that male-male sex is wrong when the gay male series came first, $\mathrm{X}^{2}(1, n=487)=$ $7.86(p<.01)$, but the second pair of bars shows that White men's agreement dropped to approximately the same level as that of White women when the lesbian series was presented first. In Panel 2-2, the first pair of bars shows that men were significantly less likely than women to agree that lesbian sex is wrong when the lesbian series came first, $X^{2}(1, n=476)=$ 4.97 ( $p<.05$ ). The second pair of bars shows that both groups were more likely to agree that lesbian sex is wrong when the gay male series was presented first. White men and women did not differ significantly in the latter condition.

Panel 3-1 (Figure 3) shows that White men's ratings of disgust for gay men were significantly higher than those of White women in both conditions, but the sex difference was greater when the gay male series came first $\left[\mathrm{X}^{2}(1, n=\right.$ 487) $=29.93(p<.001)]$ than when it followed the lesbian series $\left[X^{2}(1, n=476)=5.73(p<\right.$ .05)]. Panel 3-2 shows that men and women effectively did not differ in their ratings of disgust for lesbians when the lesbian items came first, but men expressed significantly greater disgust
for lesbians than did women when the gay male series was presented first, $\mathrm{X}^{2}(1, n=489)=3.90$ ( $p<.05$ ).

Panel 4-1 (Figure 4) shows that significantly more women than men rated male homosexuality as natural when the gay male series came first, $\mathrm{X}^{2}(1, n=480)=10.02(p<.01)$, but the groups did not differ when the lesbian series came first because women's agreement dropped in this condition. Conversely, panel 4-2 shows that significantly more men than women rated lesbianism as natural when the lesbian series was presented first, $\mathrm{X}^{2}(1, n=470)=5.34(p<$ .05), but the groups did not differ when the gay male series came first.

## Black Respondents

Table 3 reports percentages of agreement for Black respondents for the 8 items, using a format similar to that of Table 2. Order effects were observed for only 3 items for Blacks but the magnitude of the differences was large for each. When the lesbian series was presented first, the proportion of Black men agreeing that lesbian sex is wrong was 19 points lower than when the gay male series came first, $\mathrm{X}^{2}(1, n=185)=$ 6.98 ( $p<.01$ ), and the proportion agreeing that lesbians are disgusting was 21.8 points lower, $\mathrm{X}^{2}$ $(1, n=185)=8.99(p<.01)$. Similar to White women, the proportion of Black women agreeing that male homosexuals are disgusting was higher (by 17.3 points) when the lesbian series was presented first, $\mathrm{X}^{2}(1, n=273)=8.20(p<.01)$.

These patterns are evident in Figure 2 (Panels 2-3 and 2-4) and Figure 3 (Panels 3-3 and 3-4). Panels 2-4 and 3-4 show that fewer men (shaded bars) characterized lesbians as immoral (Figure 2) or disgusting (Figure 3) when the lesbian items were presented first than when the gay male items came first. Panel 3-3 shows that substantially more women (white bars) expressed disgust for gay men when the lesbian items came first.

The figures also show sex differences in the effects of item order among Black respondents. Panel 2-3 (Figure 2) shows that the sex difference in Blacks' ratings of male-male sex as wrong was not significant when the gay male
series was presented first, but was significant when the lesbian series came first, $\mathrm{X}^{2}(1, n=$ $232)=5.89(p<.05)$, because of the larger proportion of Black males agreeing with the item in that condition. Panel 2-4 shows that the sex difference for ratings of lesbianism as wrong although not statistically significant in either condition - reversed its direction across conditions: Men were less likely than women to agree with the item when the lesbian series came first (first pair of bars) but more likely to agree when the gay male series came first (second pair of bars).

It can be seen in the first pair of bars in Panel 3-3 (Figure 3) that significantly fewer Black women than men regarded male homosexuality with disgust when the gay male series was presented first, $\mathrm{X}^{2}(1, n=223)=7.24(p<.01)$. This difference disappeared, however, when the lesbian series came first, mainly as a result of the higher proportion of women agreeing with the item (second pair of bars, Panel 3-3). Conversely, as the first pair of bars in Panel 3-4 shows, significantly fewer Black men than women expressed disgust for lesbianism when the lesbian series came first, $\mathrm{X}^{2}(1, n=235)=$ $7.61(p<.01)$, but this difference disappeared when the item order was reversed (second pair of bars), mainly as a result of the higher proportion of men agreeing with the item.

## Discussion

The results indicate that responses to survey questions about gay men and lesbians often differ depending on the order in which questions are posed. This effect was observed using two different assessment techniques with two independent randomizations of a national probability sample. It was most clearly evident for White and Black heterosexual men's feeling thermometer scores, and their assessments of whether homosexuality is wrong or disgusting. On these items, self-reported attitudes toward lesbians were significantly more favorable when questions about lesbians were posed without any preceding questions about gay men. In addition, White men's attitudes toward gay males were less negative when they were assessed after the
lesbian series. The latter pattern was evidenced by Black males in Experiment 1. In Experiment 2, however, Black men's level of agreement with the gay male WRONG and DISGUST items did not differ significantly by order, although the direction of their responses was opposite that of White men: They tended to evaluate gay men more negatively after responding to the lesbian items.

Women's responses were less influenced by item order. Nevertheless, they displayed order effects on specific items in Experiment 2. Fewer White women agreed that lesbianism is wrong when they received the lesbian items first, but fewer also agreed that male homosexuality is natural. Black women rated male homosexuality as more disgusting if they were asked the lesbian series first.

Thus, heterosexual men tended to report more favorable attitudes toward lesbians when they evaluated lesbians independently from gay men (i.e., when the lesbian items came first). When questions about lesbians were implicitly associated with attitudes toward gay men (i.e., presented after the gay male items), ratings of lesbians were more negative. The effects of item order on attitudes toward gay men were less consistent than on attitudes toward lesbians. White men evaluated gay men less negatively when attitudes toward them were implicitly linked to attitudes toward lesbians, but this pattern was not consistently observed for Black men. In a few cases, White and Black women expressed more negative attitudes toward gay men if the latter were evaluated after lesbians.

The fact that men's attitudes toward lesbians displayed fairly consistent patterns for the feeling thermometers as well as the WRONG and DISGUST items suggests that the effect is not limited to a specific measurement technique or survey item. Thus, it is appropriate to consider substantive explanations for the observed sex differences in item order effects. In addressing this task, we begin by considering explanations that are readily available in the research literature on survey context effects.

One possible explanation is an anchoring effect: When reacting to two different groups,
one of which is more disliked than the other, respondents may use their first response as an anchor or initial frame of reference on which they base their subsequent responses (Schumann \& Presser, 1981). In the present study, for example, men who were first presented with the gay male thermometer responded negatively, and this initial response might have served as an anchor for their subsequent response to the lesbian thermometer. Conversely, those who first received the lesbian thermometer and gave a relatively positive evaluation of lesbians might have moderated their subsequent negative rating of gay men.

If anchoring were responsible for the present findings, we should expect the magnitude of differences between ratings of lesbians and gay men to remain constant even as response means and percentages of agreement shifted upward or downward. However, reexamining the data in Tables 1, 2, and 3 - this time comparing item pairs within presentation order (columns) rather than across presentation order (rows) - reveals that the size of the differences between ratings of lesbians and gay men varied, depending on order of presentation. For example, Table 1 shows that when the lesbian feeling thermometer was presented first, the average difference between White men's scores on the gay male and lesbian thermometers ( 36.98 versus 40.88 , a difference of 3.9) was two thirds greater than when the gay male thermometer came first ( 32.01 versus 34.35 , a difference of 2.34). For Black men, the difference was more than twice as large.

Similarly, examination of each item pair in Tables 2 and 3 shows that the order of presentation did not have a constant effect on the gay male items relative to their lesbian counterparts. For example, the difference in the proportion of White males agreeing that malemale sex is wrong was 3.4 ( $70.5 \%$ versus $67.1 \%$ ) when the gay male items were presented first, but 17.3 ( $61.2 \%$ versus $43.9 \%$ ) when the lesbian items came first. Thus, the anchoring explanation appears inadequate to account for the findings.

Another type of context effect results when
two items are perceived to be in the same domain, but one is more specific than the other. When a specific question precedes a more general question, respondents often interpret the second item as asking for new information beyond what they have already provided (Tourangeau, 1992). Consequently, they exclude information that they have previously reported in their response to the specific item (e.g., Mason, Carlson, \& Tourangeau, 1994; Tourangeau, Rasinski, \& Bradburn, 1991). In one study, for example, when a question about general happiness was preceded by a question about marital happiness, survey respondents interpreted the general item as referring to aspects of their lives other than their marriages; in effect, they subtracted their marriages in answering the general question (Tourangeau et al., 1991).

Such a pattern might occur in heterosexuals' self-reported attitudes toward lesbians and gay men if questions about one of the two groups are perceived as more general than questions about the other group. There is evidence that many heterosexuals equate homosexuality with men, and that they think primarily or exclusively of men when they are exposed to a stimulus word such as homosexual (Black \& Stevenson, 1983; Kite \& Whitley, 1998). Thus, it is possible that they interpret questions about gay men as if they were general questions about homosexuality, but interpret questions about lesbians to apply specifically to homosexual women.

Asking a prior series of questions about lesbians should counteract this tendency. Responding to such questions should prepare respondents to subsequently report their attitudes specifically toward gay men (not homosexuals in general) when the gay male items are presented afterward. Consequently, responses to items about gay men would be expected to be more negative if they followed the lesbian series. By contrast, because lesbian is clearly genderspecific, the lesbian items should elicit attitudes that are distinct from attitudes toward gay men or homosexuality, regardless of when they are presented. Thus, responses to the lesbian items should not differ according to order of administration.

In the present study, women's responses to gay men fit this pattern somewhat. On some items, heterosexual women who were first asked about lesbians subsequently gave less positive evaluations of gay men (less natural for White women, more disgust for Black women). These women may have subtracted out their less negative feelings toward lesbians when subsequently asked about gay men. However, the exact opposite patterns were observed for White male respondents: Presenting the lesbian items first led to more favorable responses to gay men, whereas presenting the gay male items first led to more negative responses to lesbians. Black male respondents displayed a mixed pattern: Consistent with the subtraction explanation, their responses to the male DISGUST and WRONG items were more negative (although not significantly so) if the lesbian items came first, but their gay male thermometer scores were significantly more favorable if the lesbian items came first. And their responses to the lesbian items were strongly affected by item order.

The discussion to this point suggests that existing explanations for context effects are not fully adequate for explaining the present findings. However, directions for further inquiry are suggested by research on the cognitive organization of attitudes, on the one hand, and gender differences in heterosexuals' attitudes, on the other. As noted earlier, attitudes can be understood as long-term memory structures that are part of an associative network. When a particular attitude is activated, that activation spreads to other, linked attitudes within the network. Within the survey situation, Tourangeau (1992) has suggested that prior questions increase the accessibility of relevant "considerations" from long-term memory (e.g., feelings, beliefs, images, memories, existing evaluations) which then affect answers to subsequent questions (p. 36).

The data presented here are consistent with the hypothesis that questions about lesbians activate different associative networks from those activated by questions about gay men. For heterosexual males, answering questions about
gay men appears to stimulate retrieval of negative considerations (using Tourangeau's term), which then carry over to subsequent responses to items about lesbians. For White men, answering questions first about lesbians conversely appears to stimulate retrieval of more positive considerations which carry over to their evaluations of gay men. For heterosexual women, item order had only infrequent effects on attitude responses. When it had an impact, activating thoughts about lesbians led to more favorable evaluation of lesbians but, in some cases, less favorable evaluations of gay men. The latter pattern was also observed for Black males in some cases, although the differences were not statistically significant. In contrast to heterosexual males, initially activating thoughts about gay men led to relatively positive responses from heterosexual women.

In short, heterosexual men and women may differ not only in the direction and intensity of their attitudes toward gay men and lesbians, but also in the cognitive organization of those attitudes. In an interview situation, heterosexual women may be better able than men to retrieve their attitudes - especially their attitudes toward lesbians - and consequently are less affected by contextual variables. Greater ease of recall might result from a variety of factors, including having thought about such attitudes more extensively in the past (Krosnick, 1991), having more contact experiences with gay men and lesbians (Herek \& Capitanio, 1996), and having greater familiarity with lesbians as a result of having grown up female. In contrast, heterosexual men have fewer opportunities for direct contact with gay men and lesbians (Herek \& Capitanio, 1996), and many may not have thought extensively about their attitudes toward lesbians, apart from perhaps finding them sexually interesting (Kite \& Whitley, 1998; Louderback \& Whitley, 1997). Thus, asking about lesbians first may facilitate retrieval of neutral or positive considerations by heterosexual men.

This explanation is distinct from the anchoring hypothesis discussed above. Anchoring refers simply to how one's responses are calibrated on
an attitude rating scale. The cognitive activation hypothesis, in contrast, suggests that the stimuli gay man and lesbian each activate somewhat different images, feelings, and memories especially for male respondents. Depending on which stimulus is presented first, the initially activated considerations prime the respondent to react more positively or more negatively to the subsequent stimulus.

Whereas the cognitive activation hypothesis suggests a possible mechanism by which questions about gay men and questions about lesbians evoke different associative networks, it does not explain why specific considerations become linked for a particular individual in the first place, and why such linkages might differ between women and men. In this regard, a functional approach to attitudes offers useful insights. Within a functional framework, the present data can be interpreted as evidence that the psychological needs served by heterosexual men's attitudes toward homosexuality differ from those served by heterosexual women's attitudes (e.g., Herek, 1987, 1992). For heterosexual women, questions about lesbians and gay men may activate mainly valueexpressive, social-expressive, or experiential functions, none of which are inherently associated with differential evaluations of lesbians compared to gay men. For example, value-based responses are likely to reflect personal judgments about the morality of samesex sexual relations, or the status of lesbians and gay men as a minority group in society. Neither set of considerations would be expected a priori to differ dramatically according to whether the attitude target is lesbians or gay men. Similarly, attitudes based on personal interactions with either a lesbian or gay man - which are much more likely among heterosexual women than heterosexual men - appear to generalize equally to attitudes toward both groups (Herek \& Capitanio, 1996).

For heterosexual men, in contrast, the topic of homosexuality often activates considerations of sexuality, gender identity, and personal threat, which are likely to evoke a defensive function (Herek, 1988). Defensive attitudes about
homosexuality are usually negative and are inherently more likely to be associated with attitudes toward homosexual persons of one's own sex rather than the other sex (Herek, 1987). Thus, asking questions about gay men may make a defensive attitude function more salient for male respondents than questions about lesbians make defense salient for female respondents. Once a defensive function is aroused, a probable consequence is that all aspects of homosexuality are subsequently evaluated more negatively. In contrast, prefacing questions about gay men with items about lesbians may make other functions salient (e.g., value expressive, utilitarian), which may be associated with less negative attitudes.

To the extent that the patterns observed here are replicable and are indeed indicative of gender differences in how heterosexuals think about lesbians and gay men, they suggest interesting avenues for further research. For example, to the extent that questions about lesbians versus gay men activate different associative networks, they may differentially affect the accessibility of other attitudes, values, beliefs, and emotions. Such linkages might be detected through assessing response latencies or with other methodologies developed for studying implicit memory and attitudes (e.g., Banaji, Blair, \& Schwarz, 1996). In another area, interventions to reduce sexual prejudice - particularly those that target heterosexual men - may be more successful if they start by addressing attitudes toward lesbians.

The findings presented here suggest that our understanding of sexual prejudice will be improved by recognizing the importance of gender differences in the cognitive organization and functions of heterosexuals' attitudes toward lesbians and gay men. At the most basic level, such recognition requires that researchers pose questions that permit separate analysis of attitudes toward gay men and toward lesbians. In addition, we must examine not only the answers that respondents give to our questions but also the psychological processes that produce those answers.

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## Notes

${ }^{1}$ Most empirical research has not assessed respondents' sexual orientation. Nevertheless, we refer here to heterosexuals' attitudes because we believe that most researchers conceptualize this as a domain of intergroup attitudes and assume that the vast majority of their respondents are heterosexual.
${ }^{2}$ One item, administered in two Los Angeles Times polls, asked separately about respondents' feeling uncomfortable around homosexual men and lesbian women. Another item, asked in three Roper surveys, asked male respondents about their reaction to a son having a homosexual relationship, and female respondents their reactions to $a$ daughter having a lesbian relationship.
${ }^{3}$ When the ATL and ATG items were first
developed, no significant differences were observed when 368 undergraduate students completed the scales, one-half with the item order reversed (Herek, 1988, Footnote 2). We did not assume that this finding was generalizable to the present sample and methodology, however, because of the different samples (convenience sample of students versus RDD sample of US adults), modes of administration (self-administered questionnaire versus telephone interviews), and number of items (the students completed 10 -item versions of the ATL and ATG, compared to 3 -item versions in the present study).
${ }^{4}$ This item was asked approximately midway through the interview. Respondents who
described themselves as homosexual, gay, or lesbian were not asked the ATL or ATG items.
${ }^{5}$ Chi-square comparisons of Black respondents in the two samples did not reveal statistically significant ( $\mathrm{p}<.05$ ) differences across samples for the variables of respondent sex, age, geographic region, educational level, income, employment status, marital status, number of children, or political party.
${ }^{6}$ Refusals and "Don't Know" responses were excluded from the chi-square analyses and the tables. The maximum levels of nonresponse for any item were $2.7 \%$ (Whites) and $5.2 \%$ (Blacks). Chi-square analyses indicated that patterns of nonresponse for individual items were not associated with order of presentation.

Table 1
Feeling Thermometer Mean Scores By Target Group, Respondent Sex and Race, and Order of Administration

PRESENTATION ORDER

RESPONDENT
RACE AND SEX

GAY MEN
FIRST

LESBIANS DIFFERENCE FIRST

1. White Women

| $n$ | 292 | 251 |  |
| :--- | :--- | :--- | :--- |
| Gay Men | 44.16 | 40.56 | +3.60 |
| Thermometer | $(26.22)$ | $(28.53)$ |  |
| Lesbians | 43.77 | 41.15 | +2.62 |
| Thermometer | $(26.15)$ | $(28.06)$ |  |

2. White Men
$n$

205
32.01
(23.59)
34.35
(23.59)

218
36.98
(27.21)

Lesbians
Thermometer
40.88
(25.92)

Thermometer
$-6.53^{b}$
3. Black Women

| $n$ | 142 | 139 |  |
| :--- | :--- | :--- | :--- |
| Gay Men | 42.73 | 37.56 | +5.17 |
| Thermometer | $(29.81)$ | $(28.84)$ |  |
| Lesbians | 41.37 | 37.89 | +3.48 |
| Thermometer | $(29.71)$ | $(29.21)$ |  |

142
139
42.73
(29.81)
41.37
37.89
$+5.17$
37.56
$-4.97^{\text {d }}$

$$
2
$$

Table 1 (continued)

## PRESENTATION ORDER

RESPONDENT
GAY/LESBIAN LESBIAN/GAY
DIFFERENCE
SEX
4. Black Men
$n$
Gay Men
Thermometer
Lesbians
Thermometer

104
29.64
(27.47)
32.70
(27.02)

87
37.23
$-7.59^{a}$
(30.65)
45.76
$-13.06^{\text {b }}$
(30.44)

Note. Standard deviations are presented in parentheses. Higher scores indicate more favorable ratings. Positive difference scores indicate more favorable ratings when the gay male thermometer was presented first; negative difference scores indicate more negative ratings when the gay men thermometer was presented first. All respondents self-identified as heterosexual.
${ }^{\mathrm{a}} p<.05 .{ }^{\mathrm{b}} p<.01 .{ }^{\mathrm{d}} p<.10$.

Table 2
Whites' Response Distributions for ATG and ATL Items By Target Group, Respondent Sex, and Order of Administration (\% Agree)

## RESPONDENT SEX \& ITEM ORDER

WOMEN

| ITEM \& TARGET | $\mathrm{G} / \mathrm{L}^{1}$ | $\mathrm{~L} / \mathrm{G}^{2}$ | DIFFERENCE | $\mathrm{G} / \mathrm{L}^{1}$ | $\mathrm{~L} / \mathrm{G}^{2}$ | DIFFEREN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WRONG |  |  |  |  |  |  |
| Gay Male | $58.1 \%$ | $62.2 \%$ | -4.1 | $70.5 \%$ | $61.2 \%$ | $+9.3^{\mathrm{a}}$ |
| $n$ | 277 | 262 |  | 210 | 214 |  |
| Lesbian | $64.4 \%$ | $54.2 \%$ | $+10.2^{\mathrm{a}}$ | $67.1 \%$ | $43.9 \%$ | $+23.2^{\mathrm{c}}$ |
| $n$ | 278 | 262 |  | 210 | 214 |  |
| DISGUSTING |  |  |  |  |  |  |
| Gay Male | $35.1 \%$ | $43.0 \%$ | -7.9 | $60.1 \%$ | $54.0 \%$ | +6.1 |
| $n$ | 279 | 263 |  | 208 | 213 |  |
| Lesbian | $43.4 \%$ | $38.9 \%$ | +4.5 | $52.4 \%$ | $37.3 \%$ | $+15.1^{\mathrm{b}}$ |
| $n$ | 279 | 262 |  | 210 | 212 |  |

NATURAL

| Gay Male | $34.1 \%$ | $22.7 \%$ | $+11.4^{\mathrm{b}}$ | $21.0 \%$ | $21.9 \%$ | -0.9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $n$ | 270 | 260 |  | 210 | 210 |  |
| Lesbian | $30.2 \%$ | $25.0 \%$ | +5.2 | $31.1 \%$ | $34.8 \%$ | -3.7 |
| $n$ | 275 | 260 |  | 209 | 210 |  |
| GOOD |  |  |  |  |  |  |
| Gay Male | $95.7 \%$ | $93.2 \%$ | +2.5 | $93.8 \%$ | $91.2 \%$ | +2.6 |
| $n$ | 277 | 263 |  | 211 | 215 |  |
|  |  |  |  | $95.2 \%$ | $92.1 \%$ | +3.1 |
| Lesbian | $96.4 \%$ | $92.4 \%$ | $+4.0^{\mathrm{a}}$ | 210 | 215 |  |
| $n$ | 279 | 263 |  |  |  |  |

Note. Percentages combine respondents who answered "agree strongly" or "agree somewhat." "Don't know" and "no response" are omitted from table.
${ }^{1}$ Items about gay men first. ${ }^{2}$ Items about lesbians first.
${ }^{\text {a }} p<.05 .{ }^{\text {b }} p<.01 .{ }^{\mathrm{c}} p<.001$.

Table 3
Blacks' Response Distributions for ATG and ATL Items By Target Group, Respondent Sex, and Order of Administration (\% Agree)

RESPONDENT SEX \& ITEM ORDER

WOMEN
ITEM \& TARGET $\mathrm{G} / \mathrm{L}^{1} \quad \mathrm{~L} / \mathrm{G}^{2}$ DIFFERENCE $\quad \mathrm{G} / \mathrm{L}^{1} \quad \mathrm{~L} / \mathrm{G}^{2}$ DIFFERENCE

## WRONG

| $\begin{aligned} & \text { Gay Male } \\ & \quad n \end{aligned}$ | $\begin{gathered} 62.8 \% \\ 129 \end{gathered}$ | $\begin{gathered} 66.9 \% \\ 145 \end{gathered}$ | -4.1 | $\begin{gathered} 71.1 \% \\ 97 \end{gathered}$ | $\begin{gathered} 81.6 \% \\ 87 \end{gathered}$ | -10.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lesbian | $\begin{gathered} 64.6 \% \\ 127 \end{gathered}$ | $\begin{gathered} 62.3 \% \\ 146 \end{gathered}$ | +2.3 | $\begin{gathered} 70.1 \% \\ 97 \end{gathered}$ | $\begin{aligned} & 51.1 \% \\ & 88 \end{aligned}$ | $+19.0^{\text {b }}$ |
| DISGUSTING |  |  |  |  |  |  |
| Gay Male <br> n | $\begin{gathered} 40.2 \% \\ 127 \end{gathered}$ | $\begin{aligned} & 57.5 \% \\ & 146 \end{aligned}$ | $-17.3^{\text {b }}$ | $58.3 \%$ 96 | $\begin{gathered} 61.4 \% \\ 88 \end{gathered}$ | -3.1 |
| Lesbian <br> $n$ | $\begin{gathered} 51.2 \% \\ 127 \end{gathered}$ | $\begin{gathered} 48.6 \% \\ 146 \end{gathered}$ | +2.6 | $\begin{gathered} 52.1 \% \\ 96 \end{gathered}$ | $\begin{gathered} 30.3 \% \\ 89 \end{gathered}$ | $+21.8^{\text {b }}$ |
| NATURAL |  |  |  |  |  |  |
| $\begin{gathered} \text { Gay Male } \\ n \end{gathered}$ | $\begin{gathered} 26.8 \% \\ 127 \end{gathered}$ |  | +1.3 | $\begin{gathered} 20.0 \% \\ 95 \end{gathered}$ | $\begin{gathered} 20.0 \% \\ 85 \end{gathered}$ | 0.0 |
| Lesbian <br> n | $\begin{gathered} 30.5 \% \\ 128 \end{gathered}$ | $\begin{aligned} & 26.1 \% \\ & 142 \end{aligned}$ | +4.4 | $\begin{gathered} 25.3 \% \\ 95 \end{gathered}$ | $\begin{gathered} 37.2 \% \\ 86 \end{gathered}$ | -11.9 |
| GOOD |  |  |  |  |  |  |
| Gay Male <br> n | $\begin{gathered} 93.8 \% \\ 129 \end{gathered}$ | $\begin{gathered} 93.2 \% \\ 148 \end{gathered}$ | +0.6 | $\begin{gathered} 85.6 \% \\ 97 \end{gathered}$ | $\begin{gathered} 87.5 \% \\ 88 \end{gathered}$ | -1.9 |
| Lesbian <br> n | $\begin{gathered} 95.3 \% \\ 128 \end{gathered}$ | $\begin{gathered} 90.5 \% \\ 147 \end{gathered}$ | +4.8 | $\begin{gathered} 88.7 \% \\ 97 \end{gathered}$ | $\begin{gathered} 93.2 \% \\ 88 \end{gathered}$ | -4.5 |

Note. Percentages combine respondents who answered "agree strongly" or "agree somewhat." "Don't know" and "no response" are omitted from table.
${ }^{1}$ Items about gay men first. ${ }^{2}$ Items about lesbians first.
${ }^{\mathrm{a}} p<.05 .{ }^{\mathrm{b}} p<.01 .{ }^{\mathrm{c}} p<.001$.

## Figure Captions

Figure 1

Mean Feeling Thermometer Scores for Gay Men and Lesbians By Respondent Race and Gender

Figure 2

Percentage Agreement With WRONG Item For Lesbians and Gay Men By Respondent Race and

Gender

Figure 3

Percentage Agreement With DISGUST Item For Lesbians and Gay Men By Respondent Race and Gender

Figure 4

Percentage Agreement With NATURAL Item For Lesbians and Gay Men By Respondent Race and
Gender





