

## THE EFFECT OF INTERVIEWER GENDER ON THE SURVEY RESPONSE

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We examined the existence of gender-of-interviewer effects in two local-area surveys in which male and female interviewers were randomly assigned to interview male and female respondents. Small but consistent gender-of-interviewer effects arose on questions related to the women's movement, women's issues, and gender equality, demonstrating that, as expected, respondents were more likely to provide feminist answers to female interviewers. Gender-of-interviewer effects were somewhat more pronounced and consistent on controversial political topics: the women's movement (feminists and political activism) and their policy agenda. There was mixed evidence on whether respondents were equally susceptible to gender-of-interviewer effects. In one of the surveys, gender-of-interviewer effects were more pronounced among less well-educated and younger respondents than among respondents who were better educated or older. This effect was not replicated in the second survey.

Until recently, the consequences of survey researchers' reliance on female interviewers to collect the bulk of survey and opinion poll data in the United States had gone largely unexplored. Women were simply considered better interviewers because they were regarded as less threatening than men and, therefore, more likely to gain entry into a respondent's home. But times have changed. The advent of telephone surveys has lessened respondent fears about the potential dangers of survey participation and has resulted in an increase in the number of male survey interviewers. This change provides us with an opportunity to study the impact of interviewer gender. In addition to making research on gender-of-interviewer effects possible, a dependence on telephone surveys has also increased their importance. Gender-of-interviewer effects may be more pronounced in telephone interviews because information about an interviewer's socioeconomic status, physical attractiveness, personal

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demeanor, or other cues that might influence face-to-face survey responses are absent (Ballou, 1990; Groves and Fultz, 1985).

While the study of gender-of-interviewer effects is still in its infancy, there is growing evidence that respondents are more likely to give a feminist response to a female than to a male interviewer.<sup>1</sup> Gender-of-interviewer effects have emerged on questions assessing a diverse array of topics connected to women's issues and the women's movement: gender-role attitudes (Ballou and DelBoca, 1980; Grimes and Hansen, 1984; Lueptow, Moser, and Pendleton, 1990), the ERA (Ballou and DelBoca, 1980), women's and men's perceived societal influence and related explanations for existing gender inequalities (Ballou and DelBoca, 1980; Kane and Macaulay, 1993), the women's movement (Ballou and DelBoca, 1980; Kane and Macaulay, 1993), and government policy on women's issues (Kane and Macaulay, 1993).<sup>2</sup>

Nonetheless, the proclamation of ubiquitous gender-of-interviewer effects on questions concerning women's issues and the women's movement is premature for several reasons. First with the exception of Kane and Macaulay (1993), researchers have not controlled for the effects of individual interviewers when examining gender-of-interviewer effects. This makes it difficult to estimate the degree to which respondents are affected by an interviewer's gender. While unlikely, it is possible that a handful of feminist women interviewers in these different studies have been responsible for observed gender-of-interviewer effects. In this scenario, gender-of-interviewer effects would not occur consistently, but rather would be confined to a situation in which the beliefs of male and female interviewers differed.

Second, very few studies (see Ballou and DelBoca, 1980, and to a lesser extent Kane and Macaulay, 1993, for exceptions) have assessed the size of effects across a broad spectrum of questions that are commonly asked on topics linked to the women's movement, making it difficult to determine whether effects exist across all items or are restricted to a particular subset. Gender-of-interviewer effects have been most thoroughly documented for sex-role attitudes (Ballou and DelBoca, 1980; Grimes and Hansen, 1984; Kane and Macaulay, 1993; Lueptow, Moser, and Pendleton, 1990), perceived gender inequality, discrimination (Ballou and DelBoca, 1980; Kane and Macaulay, 1993), and support for collective action (Kane and Macaulay, 1993). Fewer studies have examined the impact of interviewer gender on a respondent's support for feminists, gender-linked public policy issues (with the exception of abortion in Ballou and DelBoca, 1980), female politicians, or a respondent's activism on women's issues, questions that are commonly asked in surveys of gender-linked political beliefs.

Third, effects are not uniform even for questions on the same topic and few studies have tested statistically the significance of gender-of-interviewer effects across several dependent variables simultaneously. This omission is

especially troubling in studies that include a large number of dependent variables because they magnify the risk of significant gender-of-interviewer effects arising on individual items purely by chance.

The characteristics of respondents most susceptible to gender-of-interviewer effects also have received scant attention in recent research on gender-of-interviewer effects. Several studies have examined whether men or women are most vulnerable to gender-of-interviewer effects. But, as yet, no clear consensus has emerged on this issue. In some studies, women are more likely than men to give feminist responses to female interviewers (Argentino, Kidd, and Bogart, 1977; Grimes and Hansen, 1984; Lueptow, Moser, and Pendleton, 1990). In other studies, male respondents appear more feminist when interviewed by a woman (Ballou and Del Boca, 1980). And in some cases it depends on the type of question asked. Ballou and Del Boca (1980) found stronger gender-of-interviewer effects among women respondents on questions about the existence of gender inequality and the personal attributes of men and women; effects for men were more pronounced on questions about the women's movement. But, Kane and Macaulay (1993) found the opposite: gender-of-interviewer effects were most pronounced among women on questions concerning the women's movement—collective action and women's shared interests—whereas male respondents were more affected by their interviewer's gender when answering questions about work-related gender equality (e.g., shared child-care responsibilities, women's influence, and male ambition). There is clearly persistent confusion over whether, and on which items, men and women are susceptible to gender-of-interviewer effects. Moreover, the study of other characteristics that might increase a respondent's vulnerability to gender-of-interviewer effects has been neglected almost entirely.

Our goal in the current study, then, is to further research gender-of-interviewer effects by pursuing two main objectives. First, we test for the existence of gender-of-interviewer effects across a broad spectrum of gender-related questions on topics commonly included in social and political surveys, such as the General Social Survey (GSS) and the National Election Studies (NES), while controlling for the identity of individual interviewers and conducting omnibus tests of the overall significance of gender-of-interviewer effects across all dependent variables. Second, the characteristics of respondents most susceptible to gender-of-interviewer effects is explored.

A respondent's gender is the only source of vulnerability to gender-of-interviewer effects that has been examined extensively in past research. Working from the assumption that interviewer effects are largely based on a respondent's need to create a positive impression (Paulhaus and Reid, 1991), researchers have assumed that women and men are not equally susceptible to gender-of-interviewer effects.<sup>3</sup> Some researchers (Ballou, 1990; Kane and

Macaulay, 1993) argue that gender-of-interviewer effects should be stronger among women based on evidence that women are more easily influenced by persuasion or group pressure than men (Becker, 1986; Eagly, 1983; Eagly and Carli, 1981). Other researchers suggest that men should be more susceptible than women because men fear offending a female interviewer who is asking questions about societal opportunities, conditions, and roles for women; this is consistent with evidence that race-of-interviewer effects are most pronounced on questions about the "other" group (Anderson, Silver, and Abramson, 1988; Schuman and Converse, 1971).

Gender is not the only attribute, however, that might affect one's susceptibility to gender-of-interviewer effects. Evidence on race-of-interviewer effects suggests several additional attributes worthy of consideration. Black and white respondents with less education or lower socioeconomic status are more likely to exhibit race-of-interviewer effects (Schuman and Converse, 1971; Campbell, 1981) though the evidence is not entirely consistent (Campbell, 1981; Hatchett and Schuman, 1975/6). In line with an impression management explanation, more pronounced race-of-interviewer effects among respondents with less education and lower socioeconomic status is interpreted as reluctance on their part to disagree with the presumed views of their more highly educated or higher-status interviewer. They simply wish to avoid appearing unintelligent, less thoughtful, or plain wrong. We have similar reason to expect weak gender-of-interviewer effects among older respondents. Older people should be less concerned with impressing college-age interviewers than young people driven to seek the approval of their age peers.

Finally, there is evidence from research on race-of-interviewer effects that interviewer effects may be more pronounced among ambivalent or unsure respondents. In a statewide Virginia poll, undecided voters overreported their support for Douglas Wilder, the black gubernatorial candidate, to white interviewers; voters who had already made up their minds were unaffected by the race of their interviewer when indicating their vote choice (Finkel, Guterbok, and Borg, 1991). We extend this finding to argue that interviewer effects should also be larger among liberal respondents.

There is a growing body of evidence that liberals experience greater ambivalence than conservatives on a range of social issues concerning women, blacks, and ethnic minorities. For instance, Feldman and Zaller (1992) found that liberals provided more contradictory arguments than conservatives in support of their position on government assistance programs to the disadvantaged even though liberals were more supportive of assistance programs. Scott (1989) uncovered greater ambivalence on abortion among pro-choice supporters than their right-to-life opponents. Devine (1989) observed that individuals who rejected racial stereotypes responded in conflicting ways to members of stereotyped groups, having to consciously repress the influence

of stereotypic thoughts on their evaluations. From this we infer that liberals may also be more susceptible to gender-of-interviewer effects. As suggested by Finkel and colleagues (1991), liberals' greater ambivalence on social issues may heighten the influence of social desirability pressures and leave them more vulnerable than conservatives to interviewer effects.<sup>4</sup>

Thus, drawing from an impression management explanation of interviewer effects, we expand beyond respondent gender the list of attributes that increase one's vulnerability to gender-of-interviewer effects to include respondent education, income, age, and ideology. Overall, we expect liberal, less well educated, less affluent, and younger respondents to be the most susceptible to gender-of-interviewer effects. It is less certain whether gender-of-interviewer effects will be stronger among men or women.

## DATA

### Sample

We test our hypotheses with data from two local-area telephone surveys: a survey of 310 Suffolk County (NY) residents conducted in the fall of 1991, and a survey of 376 Long Island residents (NY, Suffolk and Nassau Counties) conducted in the fall of 1993. We present results only for respondents who were asked all gender-linked questions by a single interviewer and whose interviewer conducted at least several interviews. This resulted in a sample of 303 respondents in the Suffolk County survey and 355 in the Long Island survey. The bulk of interviews in both surveys were conducted by undergraduate students who participated for class credit.<sup>5</sup> The response rate was 53% for the 1991 Suffolk County survey and 49% for the 1993 Long Island survey (53% in Suffolk County and 45% in Nassau).<sup>6</sup>

A male or female respondent was randomly designated as the target respondent at each telephone number, a procedure that was violated only in households containing a sole eligible adult or adults of the same sex. Both samples closely resembled the populations from which they were drawn. The main exception is that respondents in both surveys were better educated than the population as a whole.

In 1991, interviews were conducted by nine female and nine male undergraduate interviewers enrolled in a survey research class and a male and a female graduate student who had prior interviewing experience. In 1993, interviews were conducted by 13 female and 11 male undergraduate students, one male and four female graduate students, and three professional female interviewers.<sup>7</sup> Within each interviewing shift, interviewers were randomly assigned to a subset of active numbers, resulting in few differences in the characteristics of respondents interviewed by men and women, as seen in Table 1.

TABLE 1. Respondent Characteristics by Interviewer Gender

Respondent Characteristics	1991 Suffolk County Survey Interviewer Gender			1993 Long Island Survey Interviewer Gender		
	Male (N = 144)	Female (N = 159)		Male (N = 125)	Female (N = 230)	
Gender						
Male	42%	46%	$p > .1$	44%	38%	$p > .1$
Female	58	54		56	62	
Race						
White	91%	94%	$p > .1$	89%	90%	$p > .1$
Black	6	3		7	4	
Hispanic	3	2		4	3	
Asian	1	1		0	3	
Education						
High school or less	32%	32%	$p > .1$	33%	35%	$p > .1$
Some college	36	28		39	31	
College degree	32	40		28	34	
Income (in thousands)						
<20	20%	14%	$p > .1$	9%	15%	$p > .1$
20-34	27	24		25	18	
35-50	20	25		19	19	
>50	34	37		48	47	
Religion						
Protestant	22%	22%	$p > .1$	21%	18%	$p > .1$
Roman Catholic	53	55		48	54	
Jewish	7	7		14	14	
Other	18	16		17	14	

Note: Entries are percentages. Probability values are based on a chi-squared test of contingency tables in which interviewer gender was crossed with the respondent's gender, race, education, income, or religion.

### Measures

Both surveys contained a large battery of items that dealt with the women's movement, women's issues, and related beliefs. We discuss the subset of items that assess the gender-related attitudes most commonly measured in omnibus surveys such as the GSS and the NES. Items were included in 1991 and 1993 to assess support for the women's movement, a topic on which gender-of-interviewer effects have received relatively little attention. *Feminist identity* was assessed with a single question comparable to an item included in the 1992 NES; a single item was included to gauge feelings toward feminists, modified from the NES feminist feeling thermometer question (asked

from 1984 onward); and several items were added on support for *collective action*, modeled on items that appeared in the 1972 and 1976 NES (Gurin, 1985; Kalmuss, Gurin, and Townsend, 1981). Three questions on a respondent's *activism* on gender issues were included in the 1991 survey and were based on items in the 1983 GSS. The wording of all items and the reliabilities of multi-item scales are presented in the Appendix.

*Sex-role* attitudes and support for other aspects of gender equality including the perception of societal *gender inequities* and systemic gender-based *discrimination* were assessed in both studies. Questions on sex-role attitudes were adapted from a series of items regularly included in the GSS. Items on gender inequality and discrimination were included in both surveys and were adapted from items that were included in the 1972 and 1976 NES studies to assess perceptions of gender-linked "power discontent" and "legitimacy of disparities" (see Gurin, 1985; Kalmuss, Gurin, and Townsend, 1981).

Items were included in 1991 and 1993 to assess support for three main gender-linked policy issues included in recent NES studies—legalized *abortion*, tougher laws for *sexual harassment* offenders, the perceived seriousness of sexual harassment (1993 only), and *affirmative action* programs. To assess support for *female politicians*, an item was included in 1991 on Geraldine Ferraro, who was contemplating a bid for the U.S. Senate at that time, a woman's *suitability* to politics more generally (1991 only), which was adapted from a question routinely included in the GSS and occasionally the NES (Sears and Huddy, 1990) on women's emotional suitability to politics, and a question about Hillary Clinton (1993 only). Finally, several items were included in 1991 to tap support for Clarence Thomas, a prominent figure during the period in which the 1991 survey was conducted. In some instances, several items were combined to create a multi-item scale for a particular construct. In general, respondents were expected to be more supportive of female politicians, pro-women candidates, women's issues, feminists, female activism, and gender equality when interviewed by a woman and less supportive of these when interviewed by a man.

## RESULTS

### Magnitude and Consistency of Gender-of-Interviewer Effects

Differences between respondents interviewed by a male and female interviewer are presented in Table 2 for all gender-related scales and items. In order to gauge the magnitude of gender-of-interviewer effects across items and scales of different metric, all scales and single items were mathematically converted to a metric that ranged from 1 to 10, with higher scores indicating a more feminist response.<sup>8</sup> To calculate the size of gender-of-interviewer ef-

**TABLE 2. Mean Scores for All Items on Standard 1-10 Scale: By Gender of Interviewer**

	1991 Suffolk County Survey Interviewer Gender			1993 Long Island Survey Interviewer Gender		
	Male (N = 144)	Female (N = 159)	Difference Female-Male	Male (N = 125)	Female (N = 230)	Difference Female-Male
<i>Feminists</i>						
Feminist Identity	5.19	5.95	.76***	5.48	5.91	.43
Pro-Feminist Affect	5.84	6.15	.31	6.17	6.55	.38
<i>Activism</i>						
Activity on Women's Issues	2.32	2.82	.50*	—	—	—
Pro-Collective Action	6.84	7.32	.48*	6.30	6.99	.69**
<i>Gender Equality</i>						
Egalitarian Roles	6.54	6.89	.35*	5.94	6.04	.10
Inequality	7.10	7.03	-.07	6.98	6.79	-.19
Discrimination	6.53	6.63	.10	6.54	6.49	-.05
<i>Public Policies</i>						
Pro-choice	7.45	7.35	-.10	6.94	7.76	.82***
Anti-Sexual Harassment	7.06	7.37	.31	7.10	7.73	.63**
Sexual Harassm. serious	—	—	—	6.81	7.13	.32
Pro-Affirmative Action	5.50	6.34	.84**	4.19	4.22	.03
<i>Female Political Figures</i>						
Pro-Ferraro	5.18	5.83	.65	—	—	—
Women Better Suited	5.36	5.60	.24	—	—	—
Pro-Hillary Clinton	—	—	—	7.27	7.50	.23
<i>Clarence Thomas</i>						
Pro-Thomas	6.47	6.91	.44	—	—	—
Mean Difference			.37			.31

\*p < .1; \*\*p < .05; \*\*\*p < .01.

Note: Entries are mean scores standardized on a 1-to-10 scale, with 10 scored as the most feminist response. Difference scores are calculated by subtracting the mean scores obtained for female interviewers from the mean score obtained for male interviewers; higher scores indicate a tendency to give more feminist answers to female than male interviewers. All item wording is presented in the Appendix.



fects, the mean of each dependent variable for respondents interviewed by a man was subtracted from the mean for respondents interviewed by a woman. Because all original scales and items were standardized on a 10-point scale, a difference of 1.0 indicated that respondents interviewed by a woman were more supportive of women's issues by 10% of the scale range. Negative scores indicated that respondents were more supportive of women's issues when interviewed by a man.

As seen in Table 2, gender-of-interviewer effects existed across a range of gender-related survey questions. Respondents were more likely to give a feminist response to a female interviewer on 11 of the 13 gender-related concepts assessed in 1991 and on 9 of the 11 concepts measured in 1993. This is indicated in Table 2 by a positive difference score on all items and scales except perceived inequality ( $-.07$ ) and abortion ( $-.10$ ) in 1991 and on perceived inequality ( $-.19$ ) and discrimination ( $-.05$ ) in 1993. Overall, difference scores ranged from a minimum of  $-.19$  for discrimination in 1993 to a maximum of  $.84$  for affirmative action in 1991. This culminated in an average score of  $.37$  across all 13 gender-related items and scales in 1991 and an average of  $.31$  in 1993.

The difference in scores obtained by male and female interviewers was small and consistent but only reached significance for a minority of items according to *t*-tests calculated for all pairs of scores. There were statistically significant ( $p < .1$ ) differences on 5 of the 13 items in 1991 and on 3 of the 11 items included in 1993. The items most affected differed across the two surveys. In 1991 the largest gender-of-interviewer effects occurred on questions about the respondent's feminist identity and support for affirmative action; in 1993 effects were largest on questions about abortion, anti-sexual harassment legislation, and the need for collective action among women. In all instances, a female interviewer elicited more feminist answers than a male interviewer.

When both surveys are taken into consideration, gender-of-interviewer effects were somewhat more pronounced and consistent on controversial political topics—the women's movement (feminists and political activism) and their policy agenda. However, it is important to note that gender-of-interviewer effects occurred across the range of gender-related questions included in the surveys. Significant gender-of-interviewer effects ( $p < .1$ ) were observed in four of the six groupings of gender items presented in Table 2—attitudes toward feminists, political activism, public policies, and gender equality. Even items in the other two groupings—female political figures and Clarence Thomas—demonstrated effects in the predicted direction.

To ensure that these results were not an artifact of individual male or female interviewer's attitudes or interviewing style (Groves and Fultz, 1985; Kane and Macaulay, 1993), we ran regression analyses in which each of the

gender-linked dependent variables was regressed onto a dummy variable for interviewer gender and a set of dummy variables for all interviewers. To guarantee that the model was fully identified, the *sum* of regression coefficients for all male interviewers was restricted to equal zero and a similar restriction was placed on coefficients for female interviewers. This meant that a coefficient for a given male interviewer represented the extent to which he encouraged or discouraged a feminist response when compared to the average male interviewer; a coefficient for a given female interviewer indicated the extent to which the answers she received systematically deviated from the average female interviewer. The estimated regression coefficients and standard errors for interviewer gender derived from these analyses are presented in Table 3.

In general, the initial bivariate findings hold even after controlling for the effects of individual interviewers. The coefficient for interviewer gender was positive for 10 of the 13 gender scales in 1991 and 9 of the 11 scales in 1993. The average size of all 13 coefficients in 1991 was .30, only somewhat smaller than the average bivariate difference score of .37 calculated from data in Table 2; the average of all coefficients in 1993 was .27. Basically, a coefficient of 1 in Table 3 indicates that a respondent interviewed by a woman scored 1 point higher on the scale than a respondent interviewed by a man, representing an increase of 10% of the total scale range. Regression coefficients, therefore, are comparable to difference scores presented in Table 2 although calculated while simultaneously controlling for interviewer identity. Overall, gender-of-interviewer effects were slightly weaker after controlling for individual interviewers, with coefficients reaching significance ( $p < .1$ ) for only 3 of the 13 gender scales in 1991—feminist identity, egalitarian roles, and affirmative action and—and 2 in 1993—abortion and feminist identity. There was no evidence, however, that one or two interviewers had an especially pronounced influence on gender attitudes. For instance, the coefficient for a specific interviewer in 1991 reached significance for one of the 12 scales, on average; five interviewers had no impact on any of the dependent variables and one interviewer influenced three significantly.

More importantly, the coefficient for interviewer gender was significant across all 13 gender scales in 1991 when tested in a multivariate regression model that included interviewer gender and dummy variables for interviewer identity as independent variables ( $F[12, 258] = 1.78; p < .05$ ), demonstrating a small but robust gender-of-interviewer effect. This effect was somewhat weaker in 1993 and did not reach significance ( $F[11, 293] = 1.30; p > .10$ ). Overall, modest gender-of-interviewer effects emerged in both data sets, although they were slightly larger and more consistent in 1991 than in 1993.

**TABLE 3. Regression Coefficients for Interviewer Gender Controlling for Interviewer Identity**

	Gender of Interviewer (0 = male, 1 = female)	
	1991 Suffolk County Survey	1993 Long Island Survey
<i>Feminist</i>		
Feminist Identity	.70 (.28)**	.82 (.35)**
Pro-Feminist Affect	.15 (.29)	.45 (.33)
<i>Activism</i>		
Activity on Women's Issues	.39 (.32)	—
Pro-Collective Action	.29 (.28)	.56 (.45)
<i>Gender Equality</i>		
Egalitarian Roles	.33 (.21)*	.03 (.37)
Inequality	-.18 (.21)	-.21 (.25)
Discrimination	-.06 (.17)	-.21 (.35)
<i>Public Policies</i>		
Pro-Choice	-.23 (.37)	.95 (.44)**
Anti-Sexual Harassment	.46 (.30)	.27 (.41)
Sexual Harassm. Serious	—	.02 (.36)
Pro-Affirmative Action	.81 (.38)**	.15 (.31)
<i>Female Politicians</i>		
Pro-Ferraro	.57 (.41)	—
Women Better Suited	.25 (.17)	—
Pro-Hillary Clinton	—	.19 (.23)
<i>Clarence Thomas</i>		
Pro-Thomas	.44 (.33)	—
Mean Coefficient	.30	.27

\* $p < .1$ ; \*\* $p < .05$ .

Note: Each entry is an unstandardized regression coefficient for interviewer gender with its standard error in parentheses. All dependent variables were converted to a 10-point scale in which 10 is the most feminist response. Predictors in each regression equation included a dummy variable for interviewer gender and a set of dummy variables for interviewer identity. See the text for more detail on these analyses.

### Respondents Susceptible to Gender-of-Interviewer Effects

To identify the qualities of respondents who were most susceptible to gender-of-interviewer effects, we estimated a series of regression equations that included several interaction terms between interviewer gender and a respondent's demographic characteristics. Dependent variables included all of the gender items in Table 2. Independent variables included a set of dummy

variables for each individual interviewer, the respondent's gender, income, age, education, ideology, and each background variable's interaction with interviewer gender. To facilitate the interpretation of interaction terms, the mean of income, age, and education was set at zero; for ideology, moderates were given a score of zero.

The results of this analysis are mixed. There was a significant interaction between interviewer gender and education ( $F[13, 248] = 1.91; p < .05$ ) and a barely significant interaction between interviewer gender and age ( $F[13, 248] = 1.55; p < .1$ ) in the 1991 survey when tested in a multivariate regression model across all gender-linked dependent variables. We present these results and discuss them at greater length below. However, these interaction effects were not replicated in the 1993 survey, perhaps in part because the survey yielded slightly weaker gender-of-interviewer effects. We therefore treat evidence from the 1991 survey as suggestive at this point. Both interaction effects conform to our predictions but require future replication to assure their robustness.

Regression results for the 1991 survey are presented in Table 4. As noted, there was a significant interaction between interviewer gender and respondent education in the expected direction. Less-well-educated respondents were more influenced than well-educated respondents by their interviewer's gender when answering questions on gender-related issues. There was also a significant interaction between age and interviewer gender; gender-of-interviewer effects were more pronounced among younger respondents. As seen in Table 4, however, relatively few of the individual interaction terms between respondent characteristics and interviewer gender attained statistical significance.<sup>9</sup>

A closer examination of the regression analyses presented in Table 4 demonstrates the direction of both interaction effects. The coefficient for the interaction between education and interviewer gender was negative in 9 out of 13 cases, signaling a decrease in the impact of interviewer gender as education increased. Nine of the 13 interactions between age and interviewer gender were also negative, suggesting that the impact of interviewer gender declined with age. However, it is difficult to visualize the interaction between interviewer gender, education, and age in Table 4 because the coefficient for interviewer gender varies with the values of education and age.<sup>10</sup>

To help assess the extent to which formal education diminished a respondent's susceptibility to gender-of-interviewer effects, we calculated the impact of interviewer gender for respondents with 12 (30% had 12 years or less) and 17 (20% had 17 years or more) years of schooling across all dependent variables.<sup>11</sup> When the coefficient for interviewer gender was calculated for these two subgroups, gender-of-interviewer effects were strongest among respondents with the least education as expected. In 9 out of 13 cases, the coefficient for interviewer gender was larger among less than better educated

**TABLE 4. Respondents Most Susceptible to Gender-of-Interviewer Effects in 1991 Suffolk County Survey: Regression Equations with Interactions Between Interviewer Gender and Respondent Characteristics**

	Feminist Identity	Pro-Feminist Affect	Active on Women's Issues	Pro-Collective Action	Egalitarian Roles
<i>Interviewer Respondent</i>					
Gender (female)	.51 (.40)	-.06 (.26)	.20 (.46)	-.41 (.40)	.18 (.29)
Gender (female)	-.07 (.39)	-.20 (.39)	1.15 (.44)**	-.16 (.39)	.08 (.28)
Education	.18 (.09)	.09 (.09)	.23 (.11)*	.26 (.09)**	.15 (.07)*
Age	.014 (.012)	.022 (.012)	.033 (.014)*	-.031 (.012)**	-.010 (.009)
Ideology (liberal)	1.11 (.32)**	1.73 (.32)**	.62 (.37)	.91 (.32)**	.41 (.23)
Income	-.01 (.07)	-.03 (.07)	.09 (.08)	-.17 (.07)*	.11 (.05)*
<i>Intern. Gender ×</i>					
Resp. Gender	.40 (.52)	.54 (.53)	.28 (.61)	1.46 (.53)**	.27 (.38)
Education	-.06 (.13)	.01 (.13)	-.12 (.15)	-.35 (.13)**	-.02 (.09)
Age	.008 (.017)	.005 (.017)	-.022 (.019)	.028 (.017)	-.015 (.012)
Ideology (liberal)	.13 (.44)	-.26 (.45)	-.14 (.51)	.13 (.45)	.20 (.32)
Income	.10 (.10)	.14 (.11)	-.01 (.12)	.31 (.10)**	.03 (.07)
R <sup>2</sup>	.244	.260	.206	.277	.250

	Inequality	Discrimination	Pro-Choice	Anti-Sexual Harassment	Pro-Affirmative Action
<i>Interviewer Respondent</i>					
Gender (female)	-.53 (.30)	.06 (.26)	-.18 (.53)	.45 (.45)	.63 (.57)
Gender (female)	.35 (.29)	.39 (.25)	-.23 (.51)	1.16 (.43)**	.91 (.55)
Education	.23 (.07)**	-.07 (.06)	.27 (.12)*	-.08 (.10)	-.25 (.13)
Age	-.010 (.009)	.004 (.01)	-.004 (.016)	.003 (.013)	-.006 (.017)
Ideology (liberal)	.47 (.24)*	.28 (.21)	1.50 (.42)**	.31 (.36)	.19 (.46)
Income	.02 (.05)	.00 (.05)	-.11 (.10)	-.06 (.08)	-.06 (.10)

TABLE 4. (Contd.)

	Inequality	Discrimination	Pro-Choice	Anti-Sexual Harassment	Pro-Affirmative Action
<i>Interv. Gender ×</i>					
Resp. Gender	.64 (.40)	-.21 (.34)	.07 (.68)	.21 (.59)	.30 (.75)
Education	-.20 (.10)*	.14 (.08)	-.12 (.17)	-.08 (.10)	.10 (.18)
Age	.017 (.013)	-.010 (.011)	-.036 (.022)	-.010 (.019)	-.029 (.024)
Ideology (liberal)	-.03 (.33)	-.49 (.29)	-.02 (.59)	.31 (.36)	.89 (.63)
Income	.14 (.08)	.09 (.07)	.13 (.14)	.06 (.08)	-.07 (.15)
R <sup>2</sup>	.200	.096	.168	.137	.163
		Women Suited	Pro-Thomas		
<i>Interviewer</i>					
Gender (female)	.98 (.57)	.05 (.25)	.22 (.47)		
<i>Respondent</i>					
Gender (female)	1.74 (.55)**	.17 (.24)	-.15 (.45)		
Education	-.05 (.13)	.09 (.06)	.35 (.11)**		
Age	.012 (.017)	.00 (.008)	.010 (.014)		
Ideology (liberal)	1.74 (.46)**	.45 (.20)*	.84 (.38)*		
Income	.03 (.10)	.03 (.05)	-.01 (.09)		
<i>Interv. Gender ×</i>					
Resp. Gender	-.41 (.75)	.40 (.33)	.52 (.62)		
Education	.15 (.18)	-.15 (.08)	-.47 (.15)**		
Age	-.016 (.023)	-.017 (.01)	-.028 (.020)		
Ideology (liberal)	.36 (.64)	.05 (.28)	1.12 (.52)*		
Income	.09 (.15)	.11 (.07)	.06 (.12)		
R <sup>2</sup>	.296	.184	.212		

\* $p < .05$ ; \*\* $p < .01$ 

Note: Entries are unstandardized regression coefficients; standard errors are in parentheses. All dependent variables are standardized on a scale that ranges from 1 to 10. Education is measured in number of years of schooling; age is measured in years; and income is coded in 11 categories. The mean of education, age, and income is set to zero. Conservatives score 1, liberals -1, and moderates zero on the ideology scale. Interviewer and respondent gender is a dummy variable with 1 representing female. All equations include a set of dummy variables for interviewer gender not shown here.

respondents. Overall, respondents with less formal education were more susceptible to gender-of-interviewer effects on gender-related questions. When averaged across all gender-linked dependent variables, the coefficient for interviewer gender was larger among better than less-well-educated respondents (.37 and  $-.09$ ).

Gender-of-interviewer effects also decreased significantly with age. To examine more closely the interaction between interviewer gender and respondent age, we calculated the coefficient for interviewer gender among respondents aged 25 (12% of respondents were 25 or younger) and 65 (15% of respondents were 65 or older). Young respondents were somewhat more likely to support legalized abortion, affirmative action programs, Geraldine Ferraro, and women politicians, and to oppose Clarence Thomas, claim activity on women's issues, and support egalitarian sex roles when interviewed by a woman, though none of these reached significance in individual regression equations. When averaged across all gender-linked dependent variables, the coefficient for interviewer gender was larger among young than older respondents (.37 versus .07).

There was no significant interaction between interviewer and respondent gender when tested across all gender variables. However, individual regression coefficients presented in Table 4 demonstrate that women were somewhat more likely than men to give a feminist response to a woman interviewer. The interaction term was positive for 11 of the 13 dependent variables, indicating that the impact of interviewer gender was slightly greater among women. As seen in Table 4, the interaction between interviewer and respondent gender reached significance in the individual regression equation predicting collective action. Moreover, when calculated from coefficients in Table 4, the average coefficient for interviewer gender was .51 among women and .18 among men.

Gender-of-interviewer effects were slightly stronger among liberal than conservative respondents, though the interaction between interviewer gender and respondent ideology did not reach significance when tested across all 13 gender-linked dependent variables. The interaction term was positive in 8 out of 13 instances, which indicated that women interviewers elicited more feminist responses from liberal than conservative respondents. The interaction between interviewer gender and respondent ideology only reached significance for one of the 12 dependent variables—opposition to Clarence Thomas—which was in the expected direction.

Income was the only demographic characteristic that did not increase, even slightly, vulnerability to gender-of-interviewer effects in the expected direction. There was no significant interaction between interviewer gender and income when tested across all 12 gender variables. If anything, a reverse trend was detected in the regression coefficients presented in Table 4. The

interaction coefficient was positive in 10 out of 12 instances, which meant that as income increased, respondents were more likely—*not* less likely—to give a feminist response to a woman interviewer.

## DISCUSSION AND CONCLUSION

In an extension of prior research, we uncovered small but consistent gender-of-interviewer effects on a wide range of common gender-related attitudes. Gender-of-interviewer effects were slightly larger on controversial political questions concerning the women's movement and its policy agenda than on questions concerning gender equality. But it is important to stress that effects arose on a range of gender-linked questions. We did not observe significant effects on every question included in the study, but do not want to belabor this since effects have been observed in other research on some of these questions, such as perceived inequalities between men and women (Kane and Macaulay, 1993). Overall, these results bolster the assertion that respondents are susceptible to gender-of-interviewer effects across a broad spectrum of gender-linked items.

How important are gender-of-interviewer effects on gender-related items? They are quite small in our study, averaging less than one-twentieth of the total scale range or an average difference of 5 percentage points on a dichotomous question. The importance of this difference depends on the purpose of the survey. For most opinion polls, a bias of this magnitude is rarely serious and never fatal. However, since it is easy to estimate the bias introduced by an interviewer's gender, we recommend the random assignment of male and female interviewers to male and female respondents and the inclusion of interviewer information in publicly available data sets. In this way, a researcher can model directly any distortion introduced by an interviewer's gender.

It is possible that the preponderance of gender-linked questions amplified gender-of-interviewer effects in the two surveys. By this logic, gender-of-interviewer effects would be diminished in an omnibus survey that included a broader range of questions on contemporary social and political concerns. The current research does not provide any direct evidence to rule out this possibility. However, significant gender-of-interviewer effects were observed in the current surveys on some questions that appeared at the very beginning of the survey (e.g., affirmative action was the fourth question asked in 1991) before the respondent knew about the content of the survey, and effects did not occur for some questions placed midway through the survey when respondents were well aware of its content (e.g., discrimination, inequality in 1993).

In addition to establishing the size and existence of gender-of-interviewer effects, our results augment evidence on the kinds of respondents most sus-



ceptible to them. In the 1991 survey, the responses of less-well-educated and younger individuals were most affected by their interviewer's gender. These effects were not replicated in the 1993 survey and, thus, require further investigation. However, other demographic factors failed in either survey to influence susceptibility to interviewer effects. Contrary to popular expectations, but consistent with the mixed results of past research, men and women in this study were equally susceptible to gender-of-interviewer effects. Liberals were no more susceptible to interviewer effects than conservatives.

In line with the theoretical framework adopted in past research, our hypotheses about the kinds of respondents susceptible to gender-of-interviewer effects were drawn from an impression management model. But evidence that less-well-educated and younger respondents were more susceptible to gender-of-interviewer effects does not provide incontrovertible evidence for an impression management approach. An alternative explanation is provided by the *competing considerations* model (Zaller and Feldman, 1992). This model suggests that respondents are not distorting their true attitude when they give a different answer to a male and female interviewer. Rather, female interviewers elicit different considerations on gender-linked topics than do male interviewers, leading respondents to weigh different concerns when identifying their attitude.<sup>12</sup>

The existence of stronger gender-of-interviewer effects among less-well-educated and younger respondents is consistent with a competing considerations model. According to the model, young and less-well-educated respondents will demonstrate stronger gender-of-interviewer effects because they hold more malleable and less crystallized positions on political issues than older and better-educated respondents and should be more affected by the differing information made salient by a male and female interviewer.

We were not able and did not attempt to distinguish between the impression management and competing considerations explanation for gender-of-interviewer effects in this study but see this as an important next step in the study of interviewer effects. Additional research is needed to definitively test between these two alternative explanations of interviewer effects. A good first step would be to routinely include survey items drawn from self-monitoring or social desirability scales in surveys on gender or race-related issues (DeMaio, 1984). This would help to delineate the role of impression management as a motive underlying race and gender-of-interviewer effects.

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## APPENDIX

**Feminists***Feminist Identity*

Do you consider yourself a feminist or not? If a feminist: Would you describe yourself as a strong feminist or a not so strong feminist? If not a feminist: Would you describe yourself as being strongly opposed to feminists, somewhat opposed to feminists, or not at all opposed to feminists? (1991, 1993)

*Feminist Affect*

Overall, how do you feel about feminists? Do you feel: very positive, somewhat positive, somewhat negative, or very negative? (1991, 1993)

**Activism***Activity on Women's Issues* ( $\alpha = .66$ )

Have you ever joined an organization concerned with women's issues and rights? (1991)

Have you ever given money to an organization concerned with women's issues and rights? (1991)

Have you ever written a letter to a public official expressing your views on women's issues or rights? (1991)

*Collective Action* ( $\alpha = .55$ , 1991)

Things won't change unless women get together to remove laws and conditions that are unfair to all women. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991, 1993)

Conditions for women will improve on their own without women forming organizations or protesting. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991)

**Gender Equality***Gender Roles* ( $\alpha = .37$ , 1991;<sup>13</sup>  $\alpha = .70$ , 1993)

If a woman is working full-time, her husband should do half of the cooking, cleaning, and other chores around the house. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991)

If a husband and wife earn about the same amount and the woman has better job prospects in another city, her husband should consider changing jobs and moving with her. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991)

A wife, not her husband, should be the first one to take time off from work to deal with family problems. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991)

A preschool child suffers if a mother works. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree (1991, 1993)

It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1993)

It is more important for a wife to help her husband's career than to have one herself. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1993)

A working mother can establish just as warm and secure a relationship with her children as a mother who does not work. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1993)

*Inequality* ( $\alpha = .63$ , 1991;  $\alpha = .56$ , 1993)

In general, do women have more, less, or about the same amount of influence in American politics and society as men? Is that much more/less, or somewhat more/less? (1991)

Compared to a man with similar education and experience, are a woman's chances of getting promoted to top positions in business, industry, and government better, worse, or about the same? Is that much better/worse or somewhat better/worse? (1991, 1993)

Compared to a man with similar education and experience, is a woman paid better, worse, or about the same? Is that much better/worse or somewhat better/worse? (1991)

Comparing a man and a woman with the same qualifications, do you think the woman would generally be paid more than the man, less, or about the same? [IF MORE] Is that: much more or somewhat more? [IF LESS] Is that: much less or somewhat less? (1993)

When a man and a woman with the same qualifications are considered for the same job, do you think the woman is more likely to get the job, the man is more likely to get the job, or are their chances about the same? [IF THE WOMAN] Are the woman's chances much better or somewhat better? [IF THE MAN] Are the man's chances much better or somewhat better? (1993)

*Discrimination* ( $\alpha = .42$ , 1991;  $\alpha = .62$ , 1993)

These days, there is very little discrimination against working women that prevents them from getting the best jobs or promotions. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991)

There are very few women in American politics because the political parties and voters are opposed to female politicians. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree?

Full-time working women earn less than men because employers won't promote or hire women for high-paying positions. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1991, 1993)

Full-time working women may earn less than men because businesses and companies are often run by a small group of powerful men who want to keep women out. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree? (1993)

**Public Policies***Abortion*

Do you think that abortion should not be legal under any circumstances, should be legal under some circumstances, or should be legal under all circumstances? (1991, 1993)

*Sexual Harassment*

To what extent do you favor laws that would make it easier to convict someone who had committed sexual harassment at work? Are you strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed? (1991, 1993)

Do you think that sexual harassment in the workplace is a very serious problem, a somewhat serious problem, a not too serious problem, or is not a serious problem at all? (1993)

*Affirmative Action*

To what extent do you favor affirmative action programs for women, in which women are hired and promoted ahead of men with the *same* experience and qualifications? Are you strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed? (1991)

Some people say that because of past discrimination it is sometimes necessary for businesses to reserve positions for women. Others oppose this because they say it

gives women advantages they haven't earned. What about you: Are you for or against setting aside places for women? (1993)

Some people say that because of past discrimination it is sometimes necessary for colleges and universities to reserve positions for women. Others oppose this because they say it gives women advantages they haven't earned. What about you: Are you for or against setting aside places for women students? (1993)

### Female Political Figures

#### *Ferraro*

How likely would you be to vote for Geraldine Ferraro, if she were running as a Democrat against Republican Senator D'Amato for the Senate in 1992? Are you very likely, somewhat likely, somewhat unlikely, or very unlikely?

#### *Hillary Clinton*

Do you approve or disapprove of the way Hillary Clinton is handling her job as first lady? [IF APPROVE] Do you approve strongly or not so strongly? [IF DISAPPROVE] Do you disapprove strongly or not so strongly? (1993)

#### *Women Suited to Politics*

In general, do you think that most men are better suited to politics, most women are better suited, or is there no difference? If women/men are better suited: Are women/men much better or somewhat better suited to politics than men/women? (1991)

#### Clarence Thomas ( $\alpha = .67$ )

To what extent did you favor the confirmation of Clarence Thomas to the Supreme Court? Were you strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed? (1991)

If it had been proven that Anita Hill was sexually harassed by Clarence Thomas, to what extent would you have favored his confirmation to the Supreme Court? Would you have been strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed? (1991)

### NOTES

1. When discussing the results of our own and others' research, we use the term *feminist response* in a broad sense, to indicate support for gender equality, female politicians, and a range of public policies affecting women in addition to direct support for feminists.
2. The one published exception to this trend is reported by Landis, Sullivan, and Sheley (1973),

who found that a small group of married female college students provided more feminist answers to male than to female interviewers.

3. According to an impression management approach, respondents give more feminist responses to women than to men because they wish to solicit their interviewer's approval (Crowne and Marlowe, 1964), avoid alienating a polite stranger (Schuman and Converse, 1971), or avoid disapproval from a higher-status individual (Lanski and Leggett, 1960; Phillips, 1971).
4. There is continuing controversy over whether individuals with strongly held beliefs are less susceptible to survey response effects (Bishop, 1990; Krosnick and Schuman, 1988). However, despite their disagreements, researchers caution that the impact of attitude importance may vary with the nature of the survey response effect examined. Given the exclusion of interviewer effects from these studies, we continue to pursue this hypothesis.
5. In 1991, 15% of interviews were conducted by paid interviewers; in 1993, it was 18%. The distinction is somewhat artificial, however, since many students had prior interviewing experience. Thus in 1993, the bulk (63%) of completed interviews were conducted by an interviewer who had some prior interviewing experience.
6. To obtain these response rates, up to nine call-backs were made to every selected phone number, all selected individuals who refused on the first call were recontacted by an experienced interviewer, and listed phone numbers received an advance letter informing them of their selection in the study. The response rate was calculated as the ratio of completions to refusals, completions, and numbers at which there was no answer.
7. In both surveys, undergraduate students received considerable training in interviewing techniques. Students received a one-on-one role-playing session with an experienced interviewer, engaged in role-playing exercises during class time, and were exposed to a considerable amount of material in their reading and lectures on the importance of reading questions as worded, not interpreting questions for respondents, only reading written probes, and not conveying their own views. All interviews were conducted from a central telephone facility and careful supervision suggested that interviewers took their assignment seriously and adhered closely to established procedures.
8. This was done by simply inflating or deflating the scale by a constant. For instance, the 4-point sexual harassment scale was multiplied by 3 and then 2 was subtracted from it so that strongly opposed retained its value of 1, somewhat opposed changed its value from 2 to 4, somewhat in favor shifted from 3 to 7, and strongly in favor went from 4 to 10.
9. Even when interaction terms were included one at a time, few individual coefficients reached statistical significance.
10. The reason for this is apparent when the regression equation  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2 + \epsilon_1$ , where  $X_1$  is interviewer gender and  $X_2$  is education is rearranged in the following way  $Y = \beta_0 + (\beta_1 + \beta_3 X_2) X_1 + \beta_2 X_2 + \epsilon_1$ , so that the coefficient for interviewer gender is clearly seen to vary with the respondent's level of education.
11. Coefficients represent the effects of interviewer gender at differing levels of education for a respondent of moderate ideology, average age, and average income.
12. There is also evidence that respondents locate different sources of information when interviewed by interviewers of different background. Schuman and Converse (1971) found that black respondents more readily named a black as their favorite entertainer when interviewed by a black than a white interviewer.
13. The reliability coefficient for this scale is low because two factors emerged when all four items were factor analyzed. However, the weaker of these two was a methods factor on which all items loaded equally, reflecting acquiescence. Egalitarian items loaded positively and traditional items negatively on the stronger, substantive factor.

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