

Attrition and Bias on the  
International Social Survey Program (ISSP)  
Supplement

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In recent years the General Social Survey (GSS) has expanded its involvement in cross-national research. Bilateral collaboration began with the Allgemeine Bevoelkerungsumfrage der Sozialwissenschaften (ALLBUS) conducted by the Zentrum fuer Umfragen, Methoden, und Analysen, West Germany in 1980. By 1984 collaboration had expanded to include the British Social Attitudes Survey (BSA) conducted by Social Community Planning Research, Great Britain, and the National Social Science Survey (NSSS) conducted by the Australian National University, Australia. At that point the four collaborators formed the International Social Science Program (ISSP) to carry out cross-national social science research.[Note 1: Since then colleagues from Italy, Ireland, the Netherlands and Austria have begun collaborating with ISSP. For more details see Davis and Smith, 1985 and Davis and Smith, 1986.] ISSP designs an annual topical supplement to be administered either as a self-completion supplement to the participant's personal surveys or as a mail questionnaire. The first topic for collaboration (the role of government in post-industrial societies) was developed in 1984 and carried out in 1985.

The self-completion questionnaires were used so that 1) the ISSP questions would not interfere with standard questions asked in the ongoing survey projects, 2) the mode of administration used by participants with annual, personal surveys (GSS and BSA) would be comparable to those participants who did not have a personal survey each year (ALLBUS is biennial and NSSS has been administered only once), 3) respondent burden could be

reduced by limiting the length of personal interviews, and 4) some participants might restrict data collection costs.

This paper examines the use of survey supplements, factors influencing supplement attrition and nonresponse bias, and attrition and nonresponse bias on the 1985 ISSP supplement.

### Survey Supplements

Survey supplements are usually used either to accommodate a lengthy data collection without hopelessly overburdening respondents or to add to an existing survey additional questions on a new topic. In both cases the supplement is used as data extender and cost minimizer. In the first instance the goal is to limit respondent burden by reducing the amount of time that the respondent is being personally interviewed. Cost savings result from a reduction of interviewer time, although follow-up procedures to achieve an adequate response rate will reduce this savings. In the second case the goal is to find an efficient way of obtaining information on a topic. Data collection efficiency will be greater when the supplement uses or shares a higher proportion of the questions appearing on the regular survey. Usually demographics can be shared by both the main questionnaire and supplement and in some instances scales and other blocks of items from the regular survey can be used in analyzing the supplement. If we consider the costs of the regular survey as already given and underwritten, then the cost of the supplement is only its marginal, additional cost. The supplement avoids separate survey costs for such things as sampling, interviewer hiring, and general supervision, occurring only its additional costs, such as printing and data processing.

The two major disadvantages of supplements are the constraint they face at being the tail rather than the dog and the problem of supplement nonresponse. Supplements first of all need to find a regular survey on which they can piggy-back. In general the supplement will have to conform in various ways with the regular survey, accepting its sample, timing, and other basic features. In addition, the supplement will often have to conform to a fairly rigorous set of criteria regarding length, content, response style, etc. The Current Population Survey (Hanson, 1978), for example, has promulgated a detailed set of standards for accepting supplements.

Supplements also suffer from a lower response rate and probably an increase in bias from nonresponse to the supplement. If a supplement was simply a number of questions tagged on to the end of the regular questions in a survey and indistinguishable to respondents (and especially if also indistinguishable to interviewers), then nonresponse would not vary between the regular questions and the supplement. (The Looking Backwards add-on to

the 1980 GSS is an example of this design.) But for our purposes we are considering as supplements only additional questions which are administered as an explicitly distinct set of questions. Given a request for additional cooperation, supplement specific nonresponse will occur. (Even if the "supplements" were not distinct they would eventually lead to nonresponse in the form of break-offs as respondent burden accumulated.)

The degree of attrition depends on the level of respondent burden [Note: Respondent burden is sometimes simply associated with the length of the instruments, but actually it is a subjective assessment that depends on various other factors more so than time. These include the mode of administration (e.g. telephone interviews are more burdensome than personal), the difficulty of the response tasks, the sensitivity of the subject matter, the skills of the interviewers and such--see Sheatsley, 1969; Frankel, 1980; and Smith, 1984.] involved and the degree of effort expended to secure cooperation. In the case of supplements there are two types of respondent burden: 1) the respondent burden from the main questionnaire and 2) the additional respondent burden associated with the supplement. Supplement nonresponse will vary directly with the level of burden already suffered on the main questionnaire and the perceived additional burden of the supplement.

The degree to which respondent burden can be overcome and cooperation achieved depends on the level of effort and design features of the supplement. Nonresponse will be greater when there is greater separation between the main questionnaire and the supplement. When the supplement is also conducted by personal interview immediately after the main interview, [Note 3: In this discussion we refer to the initial interview as a personal interview both because that is the situation involving the 1985 GSS and ISSP supplement and because all of the examples we are aware of are similar. Other configurations are of course possible. For example, it would be perfectly possible to have an initial telephone interview with a follow-up supplement either administered on the phone or by another mode.] nonresponse will be minimized (Sheatsley, 1984). Probably next in success is asking the respondent to complete a self-administered supplement immediately after the initial interview. When a self-administered questionnaire is dropped-off for later completion or when a mail-out is sent after the interview, the response rate will be lower. If later completion is allowed, the response rate will vary with the magnitude of the follow-up effort. Response will be highest when the interviewer pick-ups the completed form, next highest when first mail and later telephone and personal follow-ups are used, and lowest when only mail follow-ups are used. While empirical evidence on the impact of various persuasion techniques and incentives for supplement completion is lacking, response should depend on roughly the same factors found to influence mail surveys (Dillman, 1978; Erdos, 1983; and Heberlain and

Baumgartner, 1978).

Table 1 summarizes what we know about the attrition level for various supplements. The attrition level ranges from the minimum of 2% on the MAS-GSS in 1982 to 39% on the OVS in 1976 and the SOA in 1984. While these studies are too mixed in procedures, sample universes, time, and topics to rigorously compare the factors we mentioned above (response burden, level of effort), we find support for certain of those earlier generalization<sup>8</sup>. The MAS and ISSP supplements which both aimed for completion immediately after the main questionnaire succeeded in having most people complete the supplement at the same sitting (99.7% on MAS and 87.4% on ISSP) and, as a result, in maintaining high response rates. Personal follow through, especially in the form of having the interviewer plan to pick up the cases also reduced attrition. This is clearest in the NORC experiment and also probably contributes to the high British Social Attitudes response rates. Similarly the use of vigorous follow-up methods probably led to the higher success rate of OOGII over OGCI. The negative impact of higher respondent burden is illustrated by the sharp drop in the response rate on the 1985 BSA compared to the two earlier BSA's when supplement length increased from 8 to 20 pages. (Since other features of the survey were nearly constant across years, it appears that the increase in the supplement length is the likely cause for the higher nonresponse and in this case page length is a reasonable proximate for respondent burden.) Similarly the low response rates on the CLS and CVS surveys may come from higher respondent burden, although differences in follow-up procedures and content make this conclusion uncertain.

### Supplement Nonresponse Bias

Nonresponse bias on the supplement depends on both the size of the attrition and the degree to which nonrespondents differ from respondents (Smith, 1983). Attrition itself only loses cases thereby increasing the sampling variation. Only differential attrition on some set of variables introduces bias into the supplement. When dealing with survey nonresponse, we often find it extremely difficult to measure nonresponse bias because we know so little about the nonrespondents (Smith, 1983 and Smith, 1984). Supplement

Table 1

### A Summary of Survey Supplements

Reported	Supplement Response Rate %	Supplement Length (pages)	Initial Mode	Follow-Up Effort	Is Supplement done by R of Main Quex?
Bias Surveys					

OCGI "essentially free"	83	2	Leave be- hind, mail back	mail with subsample by telephone/ person	Sometimes-a
OCGII Some, but unspecified	88	7	Mail out, mail back	mail followed by telephone/ person	Sometimes-a
BSA83 Too few 65+	94	8	leave behind, pickup & mail back	unspecified follow-up	Yes
BSA84 Too few 65+	93	8	"	"	Yes
BSA85 Not Known	85	20	"	"	Yes
OVS Too few less educated, poor, black,	61	24	leave be- hind, mail back	3-4 mail follow-ups	Yes
CLS Not indicated	66	28	leave behind, mail back	"	
NORC64A-b Not indicated-d	64	11	leave behind, mail to office	personal-c	No
NORC64B Not indicated	64	11	leave behind, mail to interviewer	telephone/ personal-c	No
NORC64C	73	11	leave behind,	personal	No

old

Not indicated

			interviewer pickup		
MAS-GSS Undetectable	98	8	Personal	telephone	Yes
			continuation		
ISSP-GSS See text	90	18	Self-comple- tion after interview	telephone/ personal	Yes
PORN Older people	92	6	Self-comple- tion after interview	Apparently none	Yes
SOA Too few council house tenants; no planning to vote	61	11	Self-comple- tion after interview	2 mail follow-ups	Yes
OCGI & II -	Occupational Change In a Generation, 1962 & 1973, Supplement to March Current Population Survey (Blau & Duncan, 1967; Featherman and Hauser, 1978; and Hauser and Featherman, 1977)				
BSA83, 84, 85-	British Social Attitudes Survey, 1983, 1984, and 1985 Supplement (Jowell and Airey, 1984 and Jowell and Witherspoon, 1984)				
OVS & CLS -	Opinion and Values Survey (1976) and Civil Liberties Survey (1978), Supplement to Gallup surveys (McClosky and Brill, 1983 and McClosky and Zaller, 1985)				
NORC64A,B,C -	NORC experiment on collection procedures, on national sample of Catholics (1964), "supplement" left for second adult in household or teenager (results not reported above) (Sudman, 1967 and Greeley and Rossi, 1966)				
MAS-GSS -	Military Attitude Supplement to GSS (1962) (Sheatsley, 1984)				
ISSP-GSS -	International Social Survey Program supplement to GSS (1985)				
PORN -	Self-Administered Questionnaire to Survey for Commission on				

Obscenity and Pornography (Abelson, et al., 1971)

SOA - Survey of Attitudes, local samples of labor force 18-54 in Barking and Petersbough, England (Marsh, 1985)

a - Initial CPS interview is conducted with a household informant. The OCG supplements were administered to adult males in the household who may or may not have been the initial respondent.

b - NORC64A,B,C left supplement with second person in household, either a second adult or a teenager. While this is not a supplement as defined above the data collection procedures examined are relevant to supplement attrition.

c - For NORC64A,B personal call backs were used only if interviewer still had other cases to visit in the neighborhood.

d - Sudman, 1967 does however examine differences between the personal interview adult and self-completion adult from the perspective of comparing mode of administration effects.

attrition however is similar to panel attrition (or panel mortality as it is often called) since in both cases the analyst knows a great deal about the nonrespondents on the supplement or reinterview. Despite the relative ease of studying supplement nonresponse, it appears that in none of the supplement studies in Table 1 was a major examination of supplement nonresponse bias carried out and in a number of cases no analysis is reported.

To judge nonresponse bias we carried out three pieces of analysis. First, we examined attrition on 15 basic demographics. These were not selected on any theoretical basis, but merely as the standard background characteristics that are widely used in most analyses. Second, we examined the literature on survey nonresponse, panel mortality, and the supplement attrition to develop various explanations for nonresponse. Variables that cause nonresponse should show the greatest differential attrition. Finally, we developed a specific theory that linked nonresponse to the particular content of the ISSP.

Table 2 indicates no significant association between supplement attrition and 12 of the 15 demographics. Nonrespondents were more like to lack a college education, be black, and come from the Northeast. Each of these relationships will be discussed below when causes of nonresponse are examined.

Table 3 considers six explanations for supplement nonresponse:

political involvement, social isolation, psychological well-being, socio-economic well-being, time, and interview cooperation.

Table 2

## Differential Attrition on Standard Demographics

Variables	Probability-a	Nonresponse Groups-b
Age	.484	
Education	.025	non-college
Family Income	.541	
Household Size	.990	
Labor Force Status	.474	
Marital Status	.298	
Occupation	.089	unskilled and laborers; sales and clerical
Party Identification	.440	
R's Income	.651	
Race	.049	blacks
Religion	.368	
Region	.000	northeast; east north central; east south central
Size of Community		
SRCBELT	.157	
XNORCSIZ	.714	

a - SRS probability of ISSP variable (completed/did not complete) by selected variable.

b - Groups with higher than average nonresponse among variables significant at the 0.1 level or greater.

1. Low political involvement or a lack of interest in public issues leads to supplement nonresponse.

Both the GSS and the ISSP supplement contain a large number of questions on important contemporary political issues (abortion, feminism, school prayer, civil liberties, government spending, etc.), and a person who has low interest in the public arena and the issues being discussed therein would find both the main questionnaire and the supplement more of a burden. Table 3A shows that attrition was significantly higher among people who had given fewer opinions on a scale of public opinion issues and who had no political ideology. Infrequent discussion of politics with friends also tended towards higher nonresponse, but not significantly so. Having less than



a college education also contributed to nonresponse. While education could well be measuring other dimensions than interest in politics/public affairs (with which it is strongly associated), the lack of other SES associations with supplement attrition suggests that it is not the material, class aspects of education that creates the association. Only past voting behavior shows no noteworthy association with supplement nonresponse. This pattern suggests that disinterest in public events and issues contributes to supplement attrition.

## 2. Social isolation leads to supplement nonresponse.

A personal interview is a social exchange between two people. People who keep to themselves and interact with other people less frequently probably find an interview more burdensome. Table 3B indicates that people who have few people with whom they discuss problems and who socialize less with family, friends, and neighbors are more likely to refuse to do the supplement. They also tend to be more anomic, but this association is not significant. TV viewing, often seen as increasing with social isolation, is

Table 3

### Differential Attrition on Theoretical Dimensions

	Probability	%Attrition
A. Political Involvement		
DK scale on attitude		
No DKs		7.4
1 DK	.0000	14.4
2 + DKs		27.7
Political Ideology		
None		30.3
Middle of the Road	.0005	10.9
Left or Right		8.2
Vote 80		
Yes	.549	10.0
No		11.5
Vote 84		
Yes	.506	10.2
No		11.0
Discusses Politics		
Always; Most of Time		5.8
Occasionally	.277	9.2
Almost never		11.3
Education		
Less than High School		11.2
High School	.025	13.6

College 6.6

B. Social Isolation

Discussed important matters with

No one		25.0
1		15.4
2		10.8
3	.0000	4.8
4		7.0
5		8.5
6+		2.3

Socialize Evenings

High		7.9
Medium	.0003	10.2
Low		12.7

Anomia Scale

High (1)		12.3
Medium (2-3)	.403	8.1
Low (4)		7.6

Table 3 (continued)  
Differential Attrition on Theoretical Dimensions

Probability %Attrition

TV Viewing

0 hours daily		7.9
1 hour		9.8
2 hours		11.8
3 hours	.437	8.1
4 hours		8.7
5 hours plus		12.4

Region

New England		23.9
Mid-Atlantic		19.8
South Atlantic		4.7
East North Central		11.6
East South Central	.0000	16.7
West North Central		5.9
West South Central		6.6
Mountain		6.0
West		3.4

SRCBELT

12 largest central cities		19.0
13th-100th largest central cities		7.0

Suburbs of top 12	.157	10.6
Suburbs of 13-100		9.6
Other urban		11.3
Rural		6.6

C. Psychological Well-Being

Happiness

Very		11.3
Pretty	.757	9.6
Not very		11.3

Life

Exciting		9.5
Routine	.426	10.1
Dull		15.1

Financial Satisfaction

Satisfied		9.3
More or Less	.784	9.8
Not satisfied		11.3

Job Satisfaction

Very		10.7
Moderate	.201	8.7
Dissatisfied		15.9

D. Socio-Economic Well-Being

Income

Low		8.5
Medium	.541	10.2
High		8.6

Table 3 (continued)  
Differential Attrition on Theoretical Dimensions

	Probability	%Attrition
Unemployed		
Yes	.163	20.8
No		9.9
Race		
White		9.2
Black	.049	17.6

E. Time

Labor Force Status

Working, Full Time		10.0
Working, Part Time	.474	9.5
Off Work		11.9
Retired		9.2

Keeping House		13.6
Hours Worked		
Less than 35		8.8
35-44	.255	10.6
45+		9.5
Babies		
0		11.0
1	.469	5.5
2+		10.8
F. Interview Cooperation		
Gave Family Income		
Yes		9.6
No	.026	22.9
Interviewer Rated Cooperation		
Friendly, interested		6.4
Cooperative	.0000	20.0
Restless or hostile		53.6

not related to nonresponse. We placed region and community type (SRCBELT) in the social isolation category as contextual measures of alienation within mass society. Both variables are usually strong predictors of survey nonresponse. For survey nonresponse they are taken as measures of such concerns as fear of crime and victimization/exploitation by strangers. While these factors might well be associated with survey nonresponse, they seem to have less relevance to supplement nonresponse and, on the whole, their associations with supplement attrition are more modest than usually found for survey nonresponse. We speculate that in this case they may be acting as aggregate-level measures of social isolation.

### 3. Low psychological well-being leads to supplement nonresponse.

Unhappy people preoccupied with personal worries may find an interview an additional burden or may be too involved in their own problems to devote time and energy to an interview. The variables in Table 3C however find no significant associations between various measures of psychological well-being and nonresponse.

### 4. Low socio-economic well-being leads to supplement nonresponse.

People with meager material resources and financial strains may be too occupied with their problems to devote their attention and effort to an interview. Neither family income nor respondent's income (not shown) have any trace of such an association (Table 3~). Attrition is higher among the unemployed and among blacks, but the associations are small and could arise

from other causes.

5. Time pressures lead to supplement nonresponse.

'I am too busy' is probably the most commonly mentioned reason for refusing to do a survey and completing the supplement clearly requires a person to devote additional time (the supplement took a little over 25 minutes). We unfortunately lack any very precise measures of time pressure. In Table 3E we examined whether being involved in the labor force, working longer hours, or having children under six to care for led to more refusals. No associations were found. This confirms earlier research that suggests 1) that most respondent protests about "being too busy" are not reflections of actual time pressures but rather a conventionalized way of say "I don't want to do it" or "I'm not interested" and 2) that only subjective measures of time pressures (e.g. feeling rushed all the time) associate with nonresponse.

6. Low cooperation with the interview leads to supplement nonresponse.

People may grant an interview but because of lack of interest in the interview, dislike of the interviewer, or perhaps a sense on privacy and/or mistrust show less cooperation with various aspects of the survey. Table 3F shows that refusing to report family income and the interviewer's rating of the respondent as less cooperative are significantly associated with supplement nonresponse. Unfortunately only income refusal is an independent measure since failure to complete the supplement could have influenced the interviewer's evaluation of respondent cooperativeness.

Finally, we examined whether negative feelings towards international affairs and other countries led to greater nonresponse to what respondents were told was a cross-national study known as the International Social Survey Program (GSS, 1985). Table 4 provides equivocal support for this hypothesis. Attrition was significantly higher for people favoring an

Table 4  
Differential Attrition on ISSP Related Variables

Variables	Probability	%Attrition
Role in World Affairs		
Active		8.4
Isolationist	.024	14.4
Brazil		
+3/+5		8.1
-2/+2	.926	7.7
-3/-5		8.2

Canada		
+3/+5		8.9
-2/+2	.936	10.1
-3/-5		--
Egypt		
+3/+5		2.9
-2/+2	.199	9.6
-3/-5		13.3
England		
+3/+5		8.1
-2/+2	.771	10.7
-3/-5		--
Israel		
+3/+5		5.6
-2/+2	.349	9.8
-3/-5		12.1
Japan		
+3/+5		7.7
-2/+2	.0003	9.7
-3/-5		10.1
Foreign Aid		
Spend less		10.7
Spend same, spend more	.335	8.2

isolationist role in world affairs and for people who disliked Japan. Attrition also tended to be higher for people who disliked Israel, Egypt, Canada, and England and the Pearson correlations between supplement completion and liking of Japan, Israel, and Egypt were significant. It therefore seems plausible, but not proven, that negative affect toward the international aspect of the supplement may have contributed to nonresponse.

### Conclusion

Overall supplement attrition was moderate in magnitude. The 10% loss was both exactly the level predicted by the project before the fieldwork and compared well with other supplements (Table 1). The overall response rate when survey nonresponse (21.3%) and supplement nonresponse (10%) are considered together is still a respectable 71~ ((78.7% x .90) - 70.8%).

Supplement attrition was not random however. Nonresponse was related to low interest in public issues and politics, social isolation, low cooperation on the interview, and, possibly, the cross-national purpose of the supplement. These factors led to higher attrition among the political uninterested and less educated; people who do not discuss problems and

socialize with others and who live in the Northeast; people who refused to give their family income; and isolationists and perhaps dislikers of foreign countries. While these underrepresentations are moderate in magnitude (e.g. the supplement underrepresents the Northeast by 2.3% and people with no ideology by 1%), an analyst may wish to consider whether post stratification might be necessary.

In addition we might wonder whether the characteristics we identified as associated with supplement nonresponse might also be associated with survey nonresponse. These two types of nonresponse do not necessarily arise from the same causes. We noted that urbanization has a much larger impact on survey nonresponse than on supplement nonresponse and speculated that this is because the "afraid to open door aspect of urban survey nonresponse is irrelevant to supplement nonresponse. Similarly the possible link with internationalist attitudes should have no association with general nonresponse on the GSS. On the other hand the association between social isolation and political interest and supplement nonresponse are generally stronger than indicated for surveys nonresponse. While this may be related to the different circumstances involved with the two types of nonresponse, it may be that previous attempts to assess the impact of these factors on survey nonresponse were hampered by having to use temporary nonresponse as a surrogate for final nonresponse (Smith, 1983 and Smith, 1984). Since survey nonresponse is both larger than supplement nonresponse in most cases (over twice as large on the 1985 GSS) and harder to document, it behooves us to seriously consider any possible indicators of survey nonresponse bias.

#### References

- Abelson, Herbert, et al., 'Public Attitudes Towards and Experience with Erotic Materials,' Technical Report of the Commission on Obscenity and Pornography. Volume VI. Washington, D.C.: GPO, 1971.
- Blau, Peter M., and Duncan, Otis Dudley, *The American Occupational Structure*. New York: John Wiley & Sons, 1967.
- Davis, James A. and Smith, Tom W., 'A Proposal for Support for the National Data Program for the Social Sciences' Participation in the International Social Survey Program,' Chicago: NORC, 1985.
- Davis, James A. and Smith, Tom W., *General Social Surveys, 1972-1986: Cumulative Codebook*. Chicago: NORC, forthcoming.

- Dillman, Don A., Mail and Telephone Surveys. New York: John Wiley & Sons, 1978.
- ErDOS, Paul L., Professional Mail Surveys. 2nd Edition. Malabar, Fla.: Robert E. Krieger, 1983.
- Frankel, Joanne, "Measurement of Respondent Burden: Study Design and Early Findings," BSSR Report No. 0529-8. Washington, D.C. : BSSR, 1980.
- Greeley, Andrew M. and Rossi, Peter H., The Education of Catholic Americans. Chicago: Aldine, 1966.
- Groves, Robert M. and Kahn, Robert L., Surveys by Telephone: A National Comparison with Personal Interviews. New York: Academic Press, 1979.
- "GSS Interviewer Manual," Chicago: NORC, 1985.
- Hanson, Robert H., The Current Population Survey: Design and Methodology," Technical Report No. 40, U.S. Bureau of the Census. Washington, D.C.: GPO, 1978.
- Hauser, Robert M. and Featherman, David L., The Process of Stratification: Trends and Analyses. New York: Academic Press, 1977.
- Herberlain, Thomas A. and Baumgartner, Robert, 'Factors Affecting Response Rates to Mailed Questionnaire, American Sociological Review, 43 (August, 1978) 447-462.
- Jowell, Roger and Airey, Colin, eds., British Social Attitudes: The 1984 Report. Aldershot: Gower, 1984.
- Jowell, Roger and Witherspoon, Sharon, eds., British Social Attitudes: The 1985 Report. Aldershot: Gower, 1985.
- Marsh, Catherin, "Survey of Unemployment in Two Contrasting Communities; Technical Report" Social and Political Sciences Committee, University of Cambridge, 1985.
- McClosky, Herbert and Brill, Alida, Dimensions of Tolerance: What Americans Believe About Civil Liberties. New York: Russell Sage, 1983.
- McClosky, Herbert and Zaller, John, The American Ethos Attitudes Toward Capitalism and Democracy. Cambridge: Harvard University Press, 1985.
- Sheatsley, Paul B., "The Post Interview: A Technique for Extending Time with the Respondent," Unpublished NORC report, 1984.



Sheatsley, Paul B., "The Harassed Respondent," in Current Controversies in Marketing Research. edited by Leo Bogart. Chicago: Markham, 1969.

Smith, Tom W., "Estimating Nonresponse Bias with Temporary Refusals," Sociological Perspectives, 27 (Oct., 1984b), 473-489.

Smith, Tom W., "The Hidden 25 Percent: An Analysis of Nonresponse on the 1980 General Social Survey," Public Opinion Quarterly, 47 (Fall, 1983), 486-504.

Smith, Tom W., "A Comparison of Telephone and Personal Interviewing," Unpublished NORC report, Chicago: NORC, 1984a.

Sudman, Seymour, Reducing the Cost of Surveys. Chicago: Aldine, 1967.