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PERCEPTIONS, ATTITUDES, BEHAVIORS, AND REPORTING
IN THE
NATIONAL HEALTH SURVEY

May 1965

SURVEY RESEARCH CENTER
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PREFACE

This study was possible only through the cooperation of many people. Although it is not possible to mention all of them, we would like to particularly thank Hobert Yerkey, Director of the Detroit Regional Office of the Bureau of the Census, and Irene Monti, the field supervisor in Detroit, who helped us so much in the pretesting phase of the study and in the development of training materials for observers. George Kearns and Curtis Hill of the Bureau of the Census gave suggestions and did a great deal of the work required to organize and carry out the complex scheduling for this study. Leon Pritzger of the Bureau of the Census helped with his suggestions and support for the design of the study. Robert Fuchsberg of the United States Public Health Service was the contract officer and helped to coordinate the efforts of the three organizations involved in this project. Finally, the Census interviewers who came to Ann Arbor for training and served as observers in this study were Hilda Walker, Ruby Ver Strate, Kathleen Hartwell, Doris Riddick, Gladys Bell, and Jeanne Johnson.

FOREWORD

This report presents one part of the analyses made by the Survey Research Center of The University of Michigan to the National Health Survey, United States Public Health Service, as fulfillment of contract No. PH.86-64-37. The research reported here was a cooperative undertaking of the National Health Survey, the Bureau of the Census, and the Survey Research Center. The analysis presented was carried out by Charles F. Cannell, Floyd J. Fowler, Jr., and Kent H. Marquis, assisted by Sandra F. Myers, of the Survey Research Center. The statement below is a general overview of the research project which was the source of the data discussed in this report.

The objectives of this study were:

1. To identify major variables which are related to accuracy of reporting of health information in the National Health Survey, household interview.
2. To gain sufficient insight into the dynamics underlying those variables that they can be manipulated.

There were four steps in the data collection procedure. First, thirty-five interviewers from six Bureau of the Census Regional offices were observed while carrying out their usual NHS-HIS interview assignments. The observers, using an observation form specifically designed for this study, were Census interviewers who had been specially trained to use the form. Second, after each interview, the health interviewer was asked to fill out a brief report on the respondent and the interview. Third, on the day following the health interview, an interviewer who had been sworn in as

a Special Agent of the United States Public Health Service, returned to the home and interviewed the principal respondent about the health interview: the information and attitudes he had about it. Fourth, when all observations of a given health interviewer had been completed, this special interviewer interviewed her about various aspects of her job and her reactions to various procedures and types of interviewing situations.

FIGURE 1

Chronology of data collection in a typical week

	Monday	Tuesday	Wednesday	Thursday
Health Interview	Group A	Group B	Group C	Rest of Group C if necessary
Observation	Group A	Group B	None	None
Self-enumerative form on respondent	Group A	Group B	None	None
Special Interview	None	Group A	Group B	None
Interview with interviewer	Any time after observation of health interviewer's work has been completed			

Group A Those respondents in regular NHS sample who could be contacted on Monday for health interview.

Group B Those respondents in regular NHS sample not contacted on Monday but contacted and interviewed on Tuesday.

Group C Those respondents in regular NHS sample who could not be reached on either Monday or Tuesday.

Figure 1 presents the standard data collection procedure in a given week. Occasionally an observer or special interviewer worked an extra day if too few interviews were made during the allotted two days. As Figure 2 indicates, the study was carried out in six Regions for six weeks. The study was designed to obtain data on 12 respondents for each interviewer. In one case, however, the health interviewer became ill and no data were collected on her assignment. In several others, some dwelling units were unoccupied resulting in a reduced number of obtained interviews.

FIGURE 2

Number of interviews obtained in final sample by week and region

Week	Region						
	Atlanta	Charlotte	Chicago	Detroit	New York	Phila- delphia	Total
May 4-10	15	12	11	14	13	14	79
May 11-17	12	14	8	12	9	11	66
May 18-24	13	11	14	11	12	12	73
May 25-31	9	9	9	12	15	13	67
June 1- 7	14	10*	10	14	0	15	63
June 8-14	4	14	14	10	11	11	64
Total	67	70	66	73	60	76	412

* Interviewer from Chicago region substituted, no Charlotte interviewer available.

A total of 478 interviews were observed. Thirteen of these respondents refused to be reinterviewed and 53 could not be reached by the special interviewer during the two days in which she was to work, leaving 412 respondents for whom complete information is available.

Population estimates cannot be made from this sample for several reasons. First, the sample was drawn only from the area east of the Mississippi, with the extreme Northeast excluded. Second, those respondents who are most difficult to reach are somewhat underrepresented. However, the sample is quite comparable to the population in a number of respects and is representative enough for the two purposes for which it was designed: to suggest major tendencies in respondents and to provide data for examining relationships between respondent characteristics and behavior.

INTRODUCTION

The present report is the final one in this series of five on an investigation into reporting problems on the Health Interview Survey. The study has its origins in previous record-check studies on the HIS, which showed a tendency for respondents to report inaccurately, as well as in a conceptualization of the interview which emphasizes the respondent's role in determining the accuracy of report as well as the interaction between the respondent and the interviewer. This orientation toward the interview, while discussed at times, has not been used widely in methodological studies of the data gathering interview.

The analyses of previous studies show significantly different patterns of reporting accuracy by various demographic and social class groups. Differences between reporting of groups of respondents are found characteristically in many other methodological investigations.

Since the research in these areas is sparse, it was felt that the first study should be a broadly conceived investigation. The results, it was hoped, would yield some indication of the validity of this conceptualization and would permit the generation of specific hypotheses for later testing in experimental studies. This study was, then, seen as an exploratory one, which would bring more clearly into focus areas for specific study which show greatest potential for improving reporting accuracy in the HIS.

While the study was not designed for testing specific hypotheses, neither was it a free floating search; for it was anchored to a model of an interview. The structure of the model conformed to previous

research data, to subjective impressions gained by observing many personal interviews of all types, and to research findings and theory from social science literature.

The skeleton of the model can be described fairly simply. The major dependent variable is reporting of health data and other information requested in the HIS. The step immediately preceding this is behavior (verbal and physical) of the respondent and the interviewer. Various types of behaviors, differing somewhat by whether the person has the role of respondent or interviewer, affect the quality of information reported. One of the major activities of this study was to observe and describe significant behaviors by both the interviewer and the respondent during the time the interviewer was conducting the NHS interview.

While observing behavior may tell something about what leads to valid data and what leads to inaccuracies, one wishes also to look behind the behavior as it occurs during the interview and search for some of the factors which may determine it. The perceptions and attitudes of the interviewer toward the respondent and, conversely, the perceptions and attitudes of the respondent toward the interviewer can be expected to be important in generating various reporting behaviors. These perceptions and attitudes may relate to the role of the other person, to his perceived social class or educational level, to his perceived ethnic background, to his age and to some perceptions as to the type of person he is. These perceptions may lead to attitudes and expectations about the behavior of the other person, which, in turn, may affect the quality of reporting or of interviewing techniques.

One concept of importance in this model is "balance" or similarity. Whether the two participants in this interview have similar or disparate perceptions and attitudes may become a powerful force influencing their behavior. Particularly whether both are working toward the same goals, e.g., toward accurate reporting, or working in opposite directions, may be critical to the accuracy of the health data obtained. Information on these perceptions and attitudes was obtained by observer ratings and interviews with both interviewers and respondents.

In addition to the perceptions and attitudes, there are cognitive factors which may be significant to the level of reporting. The respondent who has a hungry crying baby is likely to be a poor respondent at that particular time, regardless of attitudes which would probably produce good reporting at another time. Respondents who have no knowledge about the surveys or its purposes or reasons may wish to spend little time reporting accurately and may wish to avoid the interview as much as possible. In the interview the day following the NHS interview, respondents were also asked about some of these factors.

Finally respondents belong to various demographic groups, which may have marked influence in their perceptions and attitudes, and may affect the way the interviewers relate to them. Demographic characteristics have been found to relate significantly to reporting accuracy in several record-check studies. Some demographic information on respondents and on the HIS interviewers was obtained for this analysis.

This presents the chain of factors which was visualized in the model underlying and giving a rationale to the concepts and variables

which were to be measured. This brief sketch cannot of course give the full details of such a model. Its major differentiation from the customary bases for research on the interview is its stress on the role of the respondent as well as the interviewer and on the interaction between them. The other significant variation from usual investigation is the stress on measurement of behavior as it occurs during the interview.

In previous reports, different parts of this model were presented by themselves and in relation to demographic characteristics of respondents: attitudes, feelings and perceptions of respondents and interviewers, and the behavior that occurs in the NHS interview. In this report, the focus will be on the antecedents of the accuracy and completeness of reporting.

First, the behavior of interviewer and respondent will be examined as it relates to respondent reporting. Then, respondent attitudes and perceptions will be shown in relationship to reporting. Next, the answers interviewers gave in their interviews will be related to the reporting of their respondents. Finally, the power to predict reporting by combining interviewer and respondent characteristics will be considered.

In general, the analysis is concerned with the direct relationships between single measures or indices and reporting. Further analysis will give additional attention to the possible effects of combinations of variables, the effect of variables within certain demographic groups, and to the dynamics of the way certain variables interact to affect reporting. The following analysis, of the major effects, however, will

serve as the foundation for more refined work.

Two facts should be kept in mind while reading this report. First, the dependent variable -- respondent reporting -- is not measured as well as one would like. A refined index of the number of conditions the respondent reported for himself was used, which is not as reliable as validating reports against records. The specific fortes and shortcomings of the measure used will be discussed in the next section, but the results of this study will need to be confirmed with a better measure of respondent accuracy. Second, as this is an exploratory study, rather than a study designed to test specific hypotheses, the criterion of statistical significance is not strictly used in deciding which relationships deserve further study. Differences which are interesting, but not statistically significant, are freely discussed. Further, the data will be discussed and interpreted beyond what is proven by this study, in the interests of presenting as many ideas as possible about the use of different variables for understanding and improving survey data collection procedures.

THE DEPENDENT VARIABLE

When this study was planned, the problem of assessing the reporting performance of respondents was given considerable thought. In previous studies, samples have been drawn from medical records, and reporting in the health interview was validated against these records. Such records are difficult to obtain; however, and, perhaps more important, the samples drawn from medical records are not representative of the population interviewed by the National Health Survey. In order to study the dynamics of the NHS interview, it seemed very important to include a relatively typical group of respondents in the sample, not simply those who had received medical attention in the recent past; for though this study was not designed to make population estimates, it was designed to obtain a general idea of the relative incidence of various kinds of reactions to the interview and behaviors in the interview.

A method for assessing reporting performance was suggested by the fact that almost all validated studies of health reporting indicate the major reporting problem to be underreporting; i.e. respondents are considerably most likely to err by reporting less than they should. These finds do not permit one to conclude that the person who reports few conditions or hospitalizations is necessarily guilty of underreporting; there clearly are important differences between families in the number of health events and conditions that they have to report. However, it does allow one to say that that group of respondents that reports the fewest health events and conditions probably contains a higher proportion of poor reporters than a group of respondents who reported a large number of health events. Consequently, one could

cautiously use the assumption that those respondents who report most are probably reporting best.

The candidates for dependent variables

Respondents in the HIS interview report each of the following information for themselves and their families:

- a) Number of conditions reported by the respondent for himself.
- b) Number of conditions reported by respondent for all persons in his reporting unit.*
- c) Number of visits to doctors in the last two weeks for reporting unit.
- d) Number of visits to dentists in the last two weeks for reporting unit.
- e) Number of hospitalizations in the last year for reporting unit.
- f) Number of visits to medical specialists in the last year for reporting unit.

Each of these could have been used as an indication of the quality of respondent reporting. In order to facilitate this exploratory analysis, in which a large number of possible determinants of reporting were to be examined, a single index of reporting was selected for major use in the analysis: the number of conditions a respondent reported for himself relative to other respondents of his age. It is instructive to examine the basis on which this selection was made, by considering the reasons that other candidates for the dependent variable were rejected.

*A "reporting unit" includes all persons for whom respondent reports wholly or in part.

FIGURE 1

HYPOTHETICAL CONCENTRATION OF UNDERREPORTERS

OF VISITS TO DOCTORS

<u>Number visits to doctors</u>	<u>True incidence</u>	<u>Reported, assuming 25% underreporting</u>	<u>Percentage in each group who reported erroneously</u>
0	60	68	12
1	30	25	10
2 or more	10	7	0

Medical Services

Visits to doctors

There are two distinct advantages to the use of the number of visits to doctors reported as the dependent variable. First, as a result of a record-check study of the reporting of doctors visits, considerable is known about the patterns of underreporting of such visits. Second, the best evidence available would indicate that the incidence of underreporting of visits to doctors is relatively high; twenty and thirty per cent of those having a visit to report fail to do so. The problem however, is that the incidence of visits to doctors in the population is low; only about one in three families has a visit to be reported. Figure 1 shows why this state of affairs detracts from the power of the analysis. Although the numbers are not necessarily accurate, it is clear that even the strongest motivational theory would have difficulty in discovering large differences between, say, the attitudes of those reporting no conditions and those reporting one or more; for the concentration of underreporters is very low among those reporting no conditions (the lowest identifiable category) because the incidence of visits to doctors is low.

Hospitalizations, visits to dentists and specialists

Table 1.1 shows that incidence of reporting of each of the potential dependent variables. It may be seen that hospitalizations, visits to dentists, and visits to specialists are all reported by less than fifty per cent of the sample. Hence, it is not possible to create a group highly concentrated with underreporters using any one of these variables alone. Further, with the exception of hospitalizations, these variables are less desirable because no studies

TABLE 1.1
INCIDENCE OF REPORTING VARIOUS HEALTH EVENTS

	<u>Reported none</u>	<u>Reported 1 or more</u>	Total
Hospitalizations for reporting unit	70 (288)	30 (124)	100 (412)
Visits to doctor for reporting unit	65 (270)	35 (142)	100 (412)
Visits to dentist for reporting unit	89 (365)	11 (47)	100 (412)
Visits to specialist for reporting unit	52 (214)	48 (198)	100 (412)
Conditions for reporting unit	12 (49)	88 (363)	100 (412)
Conditions for respondents	26 (67)	74 (345)	100 (412)

designed to validate their reporting have been carried out; and, therefore, nothing is known about the rates with which they are underreported or the patterns of underreporting.

Combination of services

If the major problem of the preceding variables taken individually is that they occur infrequently, one solution would be to combine them. So, for example, those persons who report neither a doctor's visit nor a hospitalization are more likely to be underreporting than those who report one but not the other. This probability could be further increased by adding visits to dentists and specialists.

Such a procedure raises some questions regarding the comparability of those things which were being added. Further, the true incidence of utilization of medical facilities, particularly doctors, dentists, and specialists, is highly related to family income. Thus, when one looks at Table 1.2 and 1.3 it is difficult to know whether the tables are reflecting differences in utilization or differences in reporting accuracy. It is true, regardless of utilization, that those reporting no hospitalizations or visits to doctors have a higher probability of being underreporters than those who report one or more. However, the power of the analysis is weakened by the relationship to income.

Conditions

The problems with using the number of conditions reported by a respondent as the dependent variable are somewhat different. The incidence of such conditions is high, over one per person. Hence, the discriminability is very good. Conducting validity studies on

TABLE 1.2
TOTAL NUMBER OF MEDICAL SERVICES
REPORTED, BY FAMILY INCOME

Number services reported	Family Income		
	<u>\$0 - 3999</u>	<u>\$4 - 7999</u>	<u>\$7,000 or more</u>
None	44	26	22
One or more	<u>56</u>	<u>74</u>	<u>78</u>
Total	100	100	100
N	147	103	139

TABLE 1.3
NUMBER OF HOSPITALIZATIONS PLUS VISITS TO
DOCTORS REPORTED, BY FAMILY INCOME

No.hospitalizations plus visits to doctors reported	Family Income		
	<u>\$0 - 3999</u>	<u>\$4 - 6999</u>	<u>\$7000 plus</u>
None	59	44	47
One or more	<u>41</u>	<u>56</u>	<u>53</u>
Total	100	100	100
N	147	103	139

conditions is difficult, however; comparing doctors examinations with respondents reports presents a number of methodological issues which have not been fully solved. When such studies have been conducted, they yield evidence that underreporting is again the major problem. The HIP study* did show both overreporting and underreporting in considerable degree; but they found underreporting to be more significant. Also, in an unpublished study, Wilcox compared a diary and interview method, and found that almost twice as many conditions were obtained using the former procedure, indicating considerable underreporting in the interview. Finally, in work done by the Survey Research Center there is a consistent tendency for those who report the fewest conditions to underreport other health events, such as doctors visits and hospitalizations, as shown by a comparison of medical records and interview reports.

All of these factors argued for the use of the number of conditions reported by respondents as the primary dependent variable. However, several ways of selecting a group of poor reporters had to be tried before a satisfactory dependent variable was found.

Conditions per person

It was known that the incidence of health conditions increased markedly with age; and, of course, the more people there are in a family, the more conditions there will be. Consequently, it was initially decided that the best index would result if an expected number of conditions for each family was calculated, and each respondent was given a score on the basis of the degree to which the number

*Health Statistics, Series D-5

of conditions he reported differed from this expected number. By standardizing this distribution of discrepancies, one could identify a group of respondents who reported markedly fewer conditions than would be expected for a family of a given size and age composition.

Because it was difficult to obtain accurate figures on which to base the expected frequencies for people in the particular geographic area from which this sample came and for the two months during which this study occurred, it was decided to use the figures obtained in this study to compute expected frequencies. Specifically, the average number of conditions reported for people in the sample in each of three age groups was computed; and the expected number of conditions for the reporting unit* was determined by what the mean number of conditions for each family member would be.

Table 1.4 demonstrates a problem with this per person conditions index. It is clear that those with large families tended to score low on the index, while those with small families tended to score high; that is, those in large families strongly tended to report fewer than average conditions per person.

Data from record-check studies consistently show that people report better for themselves than they do for others. Therefore, one would expect that any per person measure of reporting would show that respondents who report for several proxies do not report as well as those who report only for themselves and perhaps one other person.

*A reporting unit is those persons for whom the principal respondent reported, either wholly or in part. When one respondent reports for the total family, the reporting unit is the total family. This concept is made throughout this report.

TABLE 1.4
PER PERSON CONDITIONS INDEX BY NUMBER
IN REPORTING UNIT

Per Person Conditions Index*	Number in Reporting Unit			
	1	2	3-4	5 or more
Very high	0	0	21	29
Medium high	20	58	53	56
Medium low	42	28	19	12
Very low	<u>38</u>	<u>14</u>	<u>7</u>	<u>3</u>
Total	100	100	100	100
N	73	113	114	82

*Computed as: $\frac{\text{Total expected} - \text{total reported}}{\text{Number in reporting unit.}}$
This was computed for each respondent and the
resulting discrepancy scores were standardized.

The differences in Table 1.4 are sizable enough, however, to lead to reconsideration of the index as the primary dependent variable. In a sense, those who have to report for several people have a more difficult task than those who report only for themselves. Thus differences due to family size may reflect the task difficulty rather than differences in willingness to report or the amount of effort respondents expend. A primary goal of this study is to identify the reasons why respondents differ in willingness to report. Consequently, the dependent variable should reflect, as much as possible, differences in willingness to report. Because so much variance seemed to be accounted for by the size of the reporting unit, it was decided that a per person rate of reporting conditions would not be used as the major dependent variable.

Total Conditions

The two alternatives were to use the total number of conditions reported by the respondent for the reporting unit or the number he reported for himself. Because the actual incidence of conditions increases with family size and with ages of the people in the family, to use the total number of conditions reported would have involved correcting for differences between reporting units in both of the variables. Such corrections tend to be rough, at best, and also involve considerable time and cost if they are to be done precisely. To use the conditions the respondent reported for himself, however, did not involve correcting for family size; the only correction that was needed was for the age of the respondent. An added advantage was that past studies have shown that the number of conditions a

respondent reports for himself correlates with the accuracy of his reporting of hospitalizations and visits to doctors of other family members; and the total number of conditions reported for the family has not been studied to determine if such a relation exists with it. On these bases, it was decided that the number of conditions reported by the respondent for himself would be the principal dependent variable for this study.

In order to correct for the fact that older respondents have more conditions to report than young respondents, the sample was divided into four age groups: under 35, 35-54, 55-74, and 75 or over. From each of these groups, the lowest third--i.e., the third which reported the fewest conditions for themselves--was designated the "low reporters." Although some of these respondents are simply very healthy, they are most likely to have been underreporting. Similarly, the top third of each group--i.e., the third which reported the most conditions--was designated "high reporters." Although these respondents undoubtedly underreported some, they clearly did not completely reject their task as respondents and seemed least likely to be consistent underreporters.

Table 1.5 shows the specific way this index was constructed.

On a prior grounds, one has somewhat more confidence that the "low" reporters are underreporters than that the "high" reporters are explicitly good reporters. Most people have at least one condition to report, but the difference between "medium" and "high" may be largely dependent on differences in the true health of respondents.

TABLE 1.5

CLASSIFICATION ON REPORTING INDEX BY
AGE OF RESPONDENT AND NUMBER OF
CONDITIONS REPORTED FOR RESPONDENT

<u>No. conditions reported for self</u>	<u>Age of respondent</u>			
	<u>Under 35</u>	<u>35-54</u>	<u>55-74</u>	<u>75 or over</u>
0	Low	Low	Low	Low
1	Medium	Medium	Low	Low
2	High	Medium	Medium	Medium
3	High	High	Medium	Medium
4	High	High	High	Medium
5 or more	High	High	High	High

An essential assumption of the analysis is that people who are poor reporters of one type of health information are poor reporters of all types of health information. As was stated, this assumption has been demonstrated in previous studies, but it was necessary to validate it with the particular index that was constructed. Thus, the index was related to the reporting of other health events in the interview. Table 1.6 shows the results.

It is clear that the Reporting Index is markedly related to the probability that other health events will be reported. The relationship between the number of conditions reported and the number of other health events reported can be partially explained on the basis that those who have more conditions are more likely to seek medical service. However, there are several additional considerations to be born in mind.

1. Dental visits are not generally caused by conditions which are reported. Furthermore, according to NHS data, they tend to decrease in frequency with age, while the number of conditions increases with age.

2. The most prevalent Visits to Specialists reported in the NHS are to Obstetricians and Ophthalmologists; and neither of these visits is usually caused by a condition which is reported in the NHS.

3. All of the medical services are more likely to occur in families with higher than average income, yet those with the lowest incomes and educations report slightly more conditions.

4. The Reporting Index was constructed on the basis of conditions reported for the respondent, which the other measures in Table 5 are for the total reporting unit. This fact reduces the degree to which the true health of the family contributes to the relationships in the table.

Each of these considerations lends support to the idea that the Reporting Index is reflecting a general willingness to report as well as differences in respondent health.

TABLE 1.6

REPORTING INDEX BY DOCTORS' VISITS,
HOSPITALIZATIONS, VISITS TO SPECIALISTS,
DENTIST VISITS, AND TOTAL CONDITIONS
REPORTED FOR REPORTING UNIT

<u>Number of hospitalizations for reporting unit</u>	<u>Reporting Index</u>		
	<u>Low</u>	<u>Medium</u>	<u>High</u>
0	77	72	59
1	17	20	22
2 or more	6	8	19
<u>Number of doctors visits for reporting unit</u>			
0	75	65	53
1	15	22	29
2 or more	10	13	18
<u>Number of specialist visits for reporting unit</u>			
0	59	49	43
1-2	18	23	23
3 or more	23	28	44
<u>Number of dentist visits for reporting unit</u>			
0	96	85	85
1 or more	4	15	15
<u>Total conditions reported for reporting unit</u>			
0	36	0	0
1-2	43	50	5
3-5	17	39	47
6 or more	4	11	48

Demographic Characteristics

Because one of the purposes of this study was to explain some of the relationships previously found between demographic characteristics and reporting, the relationship between demographic characteristics of respondents and the Reporting Index is of interest. Table 1.7 presents the data.

The relationship with age is the one which was created when the Reporting Index was constructed. It was not possible to put exactly equal proportions of people from each age category into the groups on the Reporting Index. However, there is no consistent age bias in the Index.

Validity studies have shown no consistent differences in the quality of reporting by males and females. As Table 1.7 shows, there are essentially no differences between the ratings of the sexes on the Reporting Index.

The major problem with using "conditions" as a measure of reporting is that those with low incomes tend to have more conditions and report more conditions than those with high incomes.* Yet validity studies have tended to show that those with low incomes and educations do not report as accurately as others. Thus reporting accuracy and true incidence are working against one another, and the result, as shown in Table 1.7, is that there is no consistent relationship between either education or income and the Reporting Index. Similarly, although non-whites do not report as well as white respondents according to the record-check data, there is only a

* See Health Statistics, Series 10, No. 9

TABLE 1.7

RATING ON REPORTING INDEX BY SELECTED
DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT

<u>Age</u> [*]	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Under 35	38	37	25	100	109
35-54	26	48	26	100	161
55-74	43	26	31	100	115
75 or over	22	52	26	100	27
<u>Race</u>					
White	32	40	28	100	351
Non-white	39	36	25	100	61
<u>Sex</u>					
Male	35	34	31	100	82
Female	33	41	26	100	330
<u>Education</u>					
0-8 years grade school	29	40	31	100	129
1-3 years high school	42	37	21	100	89
4 years high school	31	45	24	100	123
1 or more years college	31	33	36	100	67
Not ascertained	--	--	--	---	4
<u>Family Income</u>					
Under \$4,000	34	34	32	100	147
\$4,000-6,999	38	43	19	100	103
\$7,000 or more	32	41	27	100	139
Not ascertained	--	--	--	---	23
<u>Number in reporting unit</u>					
1	26	36	38	100	104
2	38	34	28	100	99
3-4	37	44	19	100	139
5 or more	31	43	26	100	70

* This relationship was created by the way the index was constructed.

very slight relationship between a respondent's race and his rating on the Reporting Index, perhaps, in part, because there are few non-whites in the sample. Although this lack of relationship is not desirable, it does mean that one can have additional confidence in any relationships which are found in this study; for the absence of demographic relationships will be working against the confirmation of hypotheses.

Finally, those who report only for themselves are rated as better reporters than those who report for others, too, although this difference is not great. In reading this report, it is very important to remember that this dependent variable is essentially unrelated to age, income and education. The presence or absence of relationship in the following sections therefore cannot be explained by referring to differences in the reporting of these demographic groups.

Conclusion

In summary, the primary dependent variable in the analysis which follows is an index of the number of conditions a respondent reported for himself relative to others of his age (the Reporting Index). Those respondents who are rated "high" reported more conditions for themselves than three-fourths of those in their age group; those rated "low" reported fewer conditions than about two-thirds of the respondents in their general age group. This variable related markedly to the reporting of other health events, but it does not relate to age, education, or income of the respondent. It will be used to examine many hypotheses, but findings which look promising will also be examined with other measures of reporting.

OBSERVATIONS OF TASK PERFORMANCE

The task for the respondent is to report health events; for the interviewer, to define for the respondent which events are to be reported. During the interviews that were observed, ratings were made and behaviors recorded describing how these tasks were performed. In this section, relationships between the Reporting Index and these observation data will be examined.

Behavioral measures

During the question and answer process the observers recorded the frequency with which certain behaviors occurred. These were combined into two indices of the amount of behavior directed toward performing the task well, one for the respondent and one for the interviewer. These behaviors include respondent's asking for clarification, elaborating and thinking about his answers; interviewer's probing, clarifying, and repeating questions. The details of the construction of these indices can be found in the Appendix, but the following are lists of items included.

Respondent Task Related Behavior Index Items

- Number of times respondent elaborated on minimum answer
- Number of times respondent asked for clarification of a question
- Number of times respondent consulted another person, records, or other sources
- Number of times respondent questioned the adequacy of an answer
- Number of times respondent paused to consider an item on List A
- Number of times respondent asked for clarification of an item on List A
- Number of times respondent elaborated on an answer on List A
- Observer rating of how carefully the respondent considered the Specialist Card

Interviewer Task Related Behavior Index Items

Number of answers the interviewer did not accept^{*}
Number of times the interviewer repeated a question
Number of other nondirective probes
Number of directive probes
Number of times the interviewer clarified a question
Number of times the interviewer suggested that the respondent
consult other sources
Number of probes on List A

Table 3.1 shows the relationship between Respondent Task Related Behavior (RTRB) and the Reporting Index. It shows clearly that respondents who are "high" reporters engage in considerably more constructive activity than those who report little. This probably reflects two things. First, those who report several conditions are asked more questions in the interview and, therefore, have more occasion to ask for clarification or to elaborate answers. Second, those who accept the task of reporting fully - as indicated by reporting more than a minimum of conditions - also put more emphasis on the quality of their responses and do things to improve their reporting, e.g., asking for clarification of the questions.

Table 3.2 shows a similar relationship between the Interviewer's Task Related Behavior (ITRB) and the Reporting Index. When a respondent reports a number of conditions, the interviewer does more work. Again, this is probably due both to the fact that more work is entailed when many conditions are reported, and to the fact that this work is helpful in inducing respondents to report fully.

Although both relationships are very strong and statistically highly significant, the relationship between respondent behavior and reporting is stronger than that between interviewer behavior and reporting. This could mean that the respondent is more important to the success of the interview

^{*} In the Observation Report this variable is referred to as "Inadequate Answers"

TABLE 3.1
REPORTING INDEX BY RESPONDENT TASK
RELATED BEHAVIOR

<u>Respondent Task Related Behavior</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Low	63	33	4	100	102
Somewhat low	36	50	14	100	115
Somewhat high	19	35	46	100	100
High	14	38	48	100	95

TABLE 3.2

REPORTING INDEX BY INTERVIEWER
TASK RELATED BEHAVIOR

<u>Interviewer task related behavior</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Low	51	39	10	100	89
Somewhat low	43	45	12	100	101
Somewhat high	29	39	32	100	132
High	12	34	54	100	90

than the interviewer; and it could reflect that respondents are a random sample of the population so that the differences among them are greater and produce more variation in the interview than those among interviewers, whose training makes them more homogeneous.

Table 3.3 shows the relationship between the ITRB and RTRB. A person was rated "high" if he was above the median in the Task Related Behavior Index, "low" if he was below the median. It is clear that the behavioral indices of the respondent tend to correspond with those of the interviewer: either both are high or both are low in over three-fourths of the interviews observed. This suggests that the level of Task Related Behavior is primarily determined by the interaction between interviewer and respondent and by the difficulty of the interview task rather than by individual characteristics of either respondent or interviewer.

In Table 3.4 the Reporting Index is related to the ITRB and the RTRB in combination. It is clear from the table that interviews in which reporting is "high" are typified by having both participants high in Task Related Behavior; and the opposite is true when reporting is low. In line with this, the question becomes: who is responsible for whether the level of task performance is high or low? Like many such questions, the answer can only be tentatively given. Much of the remainder of the report will be devoted to examining evidence which may help to answer this question.

Looking at the middle categories in Table 3.4 - those in which interviewer and respondent differed - gives one clue to the answer. This table shows clearly that when the respondent is high in task orientation, reporting is considerably better than when only the interviewer shows high task orientation. Neither alone is as good as when both are high in task orientation, nor as poor as when both are low. This focuses attention on the fact that the respondent must be induced to do some work if a good interview is to result. The interviewer's probing and clarifying is clearly helpful, but is no substitute for respondent effort.

TABLE 3.3

INTERVIEWER TASK RELATED BEHAVIOR
BY RESPONDENT TASK RELATED BEHAVIOR

<u>Respondent task related behavior</u>	<u>Interviewer Task Related Behavior</u>			
	<u>High</u>	<u>Low</u>	<u>Total</u>	<u>N</u>
High	80	20	100	195
Low	30	70	100	217

TABLE 3.4

REPORTING INDEX BY BALANCE OF INTERVIEWER
TASK RELATED BEHAVIOR AND RESPONDENT TASK
RELATED BEHAVIOR

<u>Task Related behavior</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
<u>Respondent low</u>					
Interviewer low	52	42	6	100	151
Interviewer high	42	41	17	100	66
<u>Respondent high</u>					
Interviewer low	26	41	33	100	39
Interviewer high	14	35	51	100	156

Rating indices

The recording of the number of specific behaviors was supplemented by overall ratings by observers of respondent and interviewer performance. From these, two combined indices were constructed of the degree to which the participants appeared to accept their task.

The Respondent Task Acceptance Rating (RTAR) consisted of the following observer ratings and ratings made by the NHS interviewer after the interview was completed.

Respondent Task Rating Index Items:

How cooperative was the respondent (Interviewer rating)

How hard did respondent try to communicate

Interviewer rating of accuracy of answers

Observer rating of respondent cooperation

Observer rating of accuracy of answers

The Interviewer Task Performance Rating (ITPR) consisted of these items:

How much did interviewer clarify

How hard did interviewer try to communicate

How hard did interviewer have to work

Did interviewer look up after each question

Did respondent have enough time

Table 3.5 and table 3.6 show that the relationships between these two indices and the Reporting Index are markedly positive. As with the behavioral indices, the relationship is stronger for the respondent than for the interviewer.

TABLE 3.5
REPORTING INDEX BY RESPONDENT
TASK ACCEPTANCE RATING

<u>Respondent task acceptance rating</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Low	41	43	16	100	67
Somewhat low	40	38	22	100	132
Somewhat high	29	42	29	100	143
High	21	34	45	100	70

TABLE 3.6

REPORTING INDEX BY INTERVIEWER
TASK PERFORMANCE RATING

<u>Interviewer task related rating</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Low	39	38	23	100	85
Somewhat low	37	40	23	100	96
Somewhat high	34	41	25	100	110
High	20	39	41	100	121

Table 3.7 shows that there is little or no relationship between the Respondent Task Acceptance Rating and the Interviewer Task Performance Rating. This contrast with the behavioral indices for which interviewer and respondent scores are highly correlated. Thus the level of behavior of the respondent is interdependent with the interviewer's performance, but the rating of his task acceptance is not affected by the interviewer.

Table 3.8 shows the Reporting Index by the RTAR and the ITPR in combination. As with the behavioral indices, reporting is best when interviewer and respondent are both rated "high," worst when they both are rated "low." Looking at the middle categories, it appears that a low-rated respondent with a high-rated interviewer reports as well as a high-rated respondent with a low-rated interviewer. The contribution of the interviewer to the quality of reporting is emphasized more in this table than in the corresponding table on the behavior indices. It may be the way she does her job (which can be rated) rather than how much she does that most influences the outcome of the interview.

Other ratings

Several other observational measures are relevant to obtaining a clear picture of the respondent's orientation to the task. Many of the relations that might have been predicted did not work out. For example, the number of questions the respondent asked before he let the interviewer in the door might indicate resistance that would be reflected in poor reporting. However, the relationship between the measure and the Reporting Index is slight if existent. Similarly, respondents were rated on attentiveness during the interview. If anything, attentive respondents report better, but the relationship is too slight to present the table. Observers also rated respondents on how well they appeared to grasp the

TABLE 3.7

INTERVIEWER TASK PERFORMANCE
 RATING BY RESPONDENT TASK
 ACCEPTANCE RATING

<u>Respondent task acceptance rating</u>	<u>Interviewer Task Performance Rating</u>			
	<u>High</u>	<u>Low</u>	<u>Total</u>	<u>N</u>
High	41	59	100	198
Low	46	54	100	214

TABLE 3.8

REPORTING INDEX BY INTERVIEWER
TASK PERFORMANCE RATING AND
RESPONDENT TASK ACCEPTANCE RATING

<u>Ratings of task performance</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
<u>Respondent low</u>					
Interviewer low	47	37	16	100	115
Interviewer high	32	43	25	100	99
<u>Respondent high</u>					
Interviewer low	29	41	30	100	116
Interviewer high	22	35	43	100	82

meaning of the questions that were asked. As Table 3.9 shows, there is a slight tendency for those who grasp the questions less well to report more conditions. As grasping the meaning of questions should be an asset to reporting, even this slight negative relationship is surprising. One is inclined to attribute the finding to the fact that those who report a number of conditions are asked more detailed questions than those who report few, thus increasing the likelihood that they would appear to misunderstand questions.

Observers rated how smoothly the question and answer process went: the degree of freedom from misunderstanding, tension, and the degree to which interviewer and respondent seemed to be working together rather than against one another. As Table 3.10 shows, the smoothest interviews are those in which the respondent reports few conditions. Although this was not a predicted finding, it is easy enough to understand. When the respondent reports few conditions, few demands are placed on either him or the interviewer -- he does not have to remember dates or medical names, and the interviewer has little probing to do. The interview goes quickly. It is when the task is difficult or the demands made on the respondents high that one would expect the smoothness of the interaction to be impaired.

TABLE 3.9

REPORTING INDEX BY OBSERVER RATING
OF HOW WELL RESPONDENT GRASPED
QUESTIONS

How well <u>grasped questions</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Perfectly	30	43	27	100	78
Very well	35	38	27	100	196
Average or less	26	41	33	100	138

TABLE 3.10

REPORTING INDEX BY OBSERVER RATING
OF SMOOTHNESS OF INTERVIEW

<u>Smoothness</u>	<u>Reporting Index</u>			<u>Total</u>	<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>		
Extremely smooth	42	36	22	100	73
Very smooth	36	43	21	100	195
Fairly smooth	28	39	33	100	104
Less smooth than average	18	30	52	100	40

Summary

The clearest part of the picture presented thus far is that a high level of reporting requires considerable work by both interviewer and respondent. When the respondent is low on the Reporting Index, the interviews are smooth and the pace is fast. When the reporting level is high, however, the respondent elaborates his answers and asks for question clarification, while the interviewer does considerable probing and clarifying for the respondent. The behavioral measures of performance indicate that the respondent almost always engages in a high level of additional task related behavior if he is reporting well, but that the interviewer sometimes does not have to probe a lot for reporting to be good. On the other hand, the ratings indicate that the way the interviewer performs her role is as important as the respondent's acceptance of the task in obtaining a good interview.

Because the interview is an interaction, in which each responds to the other, it is not surprising that a high level of respondent task related behavior leads to (or is caused by) a high level of interviewer behavior. The ratings of how hard each was trying to do a good job, however, are not interdependent.

It is clear that the respondent must be induced to perform at a generally high level, but it is not clear what determines the level of task behavior in the interview, and whether interviewer, respondent, or something about the combination of the two is responsible for the kind of interview that occurs.

UNRELATED CONVERSATION

In most interviews there is some interaction that is not directly related to the question-answer task. Most such interaction consists of brief comments, laughter, and the like, which does not interrupt the interview for very long. Yet, there is considerable variation in the amount of this that occurs in interviews, and one would anticipate that the tone of an interview in which there was no personal or incidental conversation at all would be very different from one in which there was a fair amount of friendly interplay.

The measures of the degree of unrelated behavior include the number of irrelevant topics introduced, the way such comments were received, and observer ratings of how much the respondent seemed to want to talk about unrelated topics. These measures were taken for both respondent and interviewer, and were combined into a single index for each. The following are the specific items included in these two indices:

Respondent Unrelated Conversation Index Items

Number of times respondent asks questions about the interviewer

Number of times the respondent talks about himself or his family other than reporting

Number of times respondent laughs or makes humorous comments

Observer rating of how much respondent wanted to chat about unrelated matters

Number of times respondent reacted to irrelevant conversation in an encouraging manner / total reactions of respondent to irrelevant conversation

Interviewer Unrelated Conversation Index Items

Number of times interviewer praises or flatters respondent

Number of times interviewer asks unrelated questions about the respondent or his family

Number of times interviewer talks about himself

Number of times interviewer laughs, or makes humorous comments

Post-interview conversation initiated or encouraged by the interviewer

Number of times interviewer responds to irrelevant conversation in an encouraging manner / total reactions of interviewer to irrelevant conversation

Tables 4.1 and 4.2 present the relationship between these indices and the Reporting Index. It is clear that both relationships are quite striking; when the respondent is high in reporting, both the interviewer and respondent engage in more unrelated conversation. The relationship is particularly strong between the Reporting Index and Respondent Unrelated Conversation. It is not possible to isolate cause and effect in these relationships. The argument that reporting leads to unrelated conversation is supported by the following points:

1. Interviews in which a number of conditions are reported last longer, and, hence, provide more opportunity for irrelevant conversation.
2. More demands are made on respondents who report a lot; therefore, interviewers may feel a need to reassure the respondent and to let him take an occasional break from the task.

TABLE 4.1

REPORTING INDEX BY RESPONDENT
UNRELATED CONVERSATION

<u>Respondent unrelated conversation</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Low	47	35	18	100	102
Somewhat low	29	42	29	100	129
Somewhat high	39	40	21	100	95
High	19	40	41	100	86

TABLE 4.2
REPORTING INDEX BY INTERVIEWER
UNRELATED CONVERSATION

<u>Interviewer unrelated conversation</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Low	46	37	17	100	71
Somewhat low	35	39	26	100	125
Somewhat high	31	38	31	100	99
High	26	42	32	100	117

Conversely, there are some reasons to think that unrelated behavior can itself lead to better reporting or be a sign of something else beneficial to reporting:

1. The respondent is most likely to initiate unrelated conversation, and by so doing he may be showing a spirit of friendly cooperation which will also result in good reporting.
2. The interviewer may initiate or encourage some unrelated conversation to put the respondent at ease, gain his cooperation, or to establish a relationship in which communication is free.
3. Unrelated conversation may, in part, stem from the respondent's desire to please the interviewer and prolong the interview; reporting is another way of accomplishing the same goals.

Whether unrelated conversation is cause, effect, or simple correlate of good reporting cannot be definitely stated at this time. Table 4.3, however, shows the interesting interdependence of interviewer and respondent conversation. It is clear that there is a strong tendency for the Unrelated Conversation Indices of the two participants to correspond: if the respondent is low, the interviewer is likely to be low, and vice versa. Apparently, some types of relationships are conducive to unrelated conversation by both participants, while others are not conducive to it for either. Not surprisingly, for any appreciable amount of personal interaction to take place, it must be supported and fostered by both members of the relationship.

Turning again to reporting, Table 4.4 shows the relationship between the two Unrelated Conversation Indices in combination with the Reporting Index. This relationship, as can be seen, is not too strong.

TABLE 4.3
 RESPONDENT UNRELATED CONVERSATION
 BY INTERVIEWER UNRELATED CONVERSATION

<u>Interviewer unrelated conversation</u>	<u>Respondent Unrelated Conversation</u>			
	<u>High</u>	<u>Low</u>	<u>Total</u>	<u>N</u>
High	68	32	100	216
Low	17	83	100	196

TABLE 4.4

REPORTING INDEX BY RESPONDENT UNRELATED
CONVERSATION AND INTERVIEWER UNRELATED
CONVERSATION

<u>Unrelated conversation</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
<u>Respondent low</u>					
Interviewer low	40	38	22	100	162
Interviewer high	29	42	29	100	69
<u>Respondent high</u>					
Interviewer low	35	41	24	100	34
Interviewer high	28	39	33	100	147

In general, one would say that reporting is poorest in those relationships in which both interviewer and respondent are below the median in interpersonal activity. This difference is not too large, however, and there is little difference among the other three categories.

It is not clear why Table 4.4, in which the indices of Unrelated Conversation are viewed in combination, shows less relationship to the Reporting Index than the indices presented singly, especially when the indices themselves are so highly correlated. Perhaps some of the discriminability of the indices was lost when they were divided into two groups instead of four; perhaps it is when both are very high or very low in unrelated conversation that the biggest differences in reporting occur. In any case, while there is still much to be learned about the role of unrelated conversation in the production of a good interview, it is clear that it does play a role.

There are several other observational measures which increase understanding of the relationship between the personal interaction of respondent and interviewer and the reporting of the respondent.

First, one might hypothesize that interviewers would interview best and respondents cooperate most when the interviewer liked the respondent. Consequently, in their post-interview report, interviewers were asked to rate how well they liked each respondent. As Table 4.5 shows, there is no apparent relationship between the way the interviewer says she feels about the respondent and the quality of respondent reporting.

Second, interviewers were also asked whether they thought the respondent was tense or relaxed. Tenseness was thought to be one sign that the interview was not going well. Table 4.6 shows very little or no relationship, however.

TABLE 4.5
REPORTING INDEX BY INTERVIEWER RATING
OF HOW WELL SHE LIKED THE RESPONDENT

<u>How well liked respondent</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Liked very much	34	36	30	100	118
Liked somewhat	35	34	31	100	135
Neutral or no opinion	34	47	19	100	143
Disliked somewhat	--	--	--	---	16

TABLE 4.6

REPORTING INDEX BY INTERVIEWER RATING
OF WHETHER RESPONDENT WAS TENSE OR
RELAXED

<u>Was respondent tense or relaxed</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Very relaxed	32	39	29	100	165
Somewhat relaxed	30	37	33	100	73
About average	43	34	23	100	86
Somewhat or very tense	30	48	22	100	88

Third, three measures by the observers at the beginning of the interview indicate initial tendency toward politeness and friendliness on the part of respondents. The observers counted the number of polite gestures, such as inviting the interviewer into the house, or offering her a chair. The number of such acts did not relate to the Reporting Index, as Table 4.7 shows. Then, observers made two general ratings, one, of the initial warmth and friendliness of the respondent, the other of his politeness. These two ratings turned out to be highly correlated, and there was very little variance in the ratings - over three-fourths being rated "average" or "slightly average." Hence, only one is presented in relation to the Reporting Index. As Table 4.8 shows, the rating of initial respondent warmth does not relate to the Reporting Index. Although the table is not shown, the politeness rating does not relate to the Reporting Index either.

Finally, at the end of the interview, the observer recorded whether or not there was any conversation after the last question was asked and, if so, how long it lasted. Table 4.9 shows that those interviews in which no conversation occurred or in which post-interview conversation lasted less than a minute were poorer interviews, as measured by the Reporting Index, than those in which post-interview conversation lasted longer.

These data form a fairly consistent pattern. Respondents report more fully when a relatively high level of personal interaction occurs in the interview. The way the respondent receives the interviewer, and the way the interviewer feels about the respondent, are not responsible for this, however. The fact that good interviews are typified by post-interview conversation which lasts more than a minute is relevant here. As such conversation is not inherent in the interview situation, the importance of the type of interviewer-respondent relationship that develops during the interview is again indicated.

TABLE 4.7

REPORTING INDEX BY NUMBER OF RESPONDENT
INITIAL POLITE ACTIONS

<u>Number of polite actions</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
0	36	36	28	100	112
1	32	42	26	100	125
2	30	40	30	100	135
3 or more	41	41	18	100	140

TABLE 4.8

REPORTING INDEX BY INITIAL OBSERVER
 RATING OF RESPONDENT WARMTH AND
 FRIENDLINESS

<u>How warm-friendly is respondent</u>	<u>Reporting Index</u>				
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	<u>N</u>
Very or somewhat warm	32	40	28	100	159
Average or somewhat unfriendly	35	39	26	100	253

* These categories were combined because there were very few cases in the "extremely warm" and the "somewhat" or "very unfriendly" categories.

TABLE 4.9
REPORTING INDEX BY LENGTH OF POST-
INTERVIEW CONVERSATION

<u>Conversation length</u>	<u>Reporting Index</u>			<u>Total</u>	<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>		
None	37	43	20	100	100
Less than one minute	40	36	24	100	75
One minute or more	30	39	31	100	237

Although the evidence shows that unrelated conversation, and perhaps mutual enjoyment of such talk, goes along with a good interview, it is incorrect to overemphasize its importance. The relationships between the measures of unrelated conversation and reporting are not as strong as those between task related behavior and reporting. Clearly, many good respondents stick strictly to the job of reporting, while some poor respondents are very willing to converse on unrelated topics. It is possible that too much unrelated conversation may distract the respondent from his task, while too little may indicate a desire to get out of the interview and an unwillingness to take part in it. Considerable interviewer judgment is, perhaps, required to determine how much the interview should include unrelated conversation in order to obtain the best results from each respondent. Further analysis may well reveal the conditions under which it is or is not helpful.

LEVEL OF ACTIVITY AND REPORTING

For a variety of reasons, either the interviewer or the respondent may want to complete the interview as quickly as possible. Concern about meeting a production schedule, about taking the respondent's time, or about some other respondent reaction may make the interviewer want to hurry; while the respondent may hurry because he has something to do or simply does not want to cooperate. There are two ways to make an interview go quickly. One is not to do very much, and the other is to do what must be done rapidly.

Four indices were constructed to measure this. The first was designed to reflect the total amount of behavior of the respondent in the interview. Many of the items of which it was composed were also used in the Task Related Behavior and Unrelated Conversation indices.

Total Amount of Respondent Behavior Index Items

Number of times respondent asks for clarification of a question
Number of times respondent consults calendar, record, or other sources
Number of times respondent questions the adequacy of an answer
Number of conditions respondent pauses to consider
Number of times respondent asks clarification of an item on List A
Number of times respondent elaborates on an item on List A
Number of respondent questions about the interviewer
Number of times respondent gives suggestion to interviewer
Number of times respondent talks about himself, family, etc.
Respondent initiates post-interview conversation
Length of post-interview conversation
Respondent considers specialist card carefully
Reactions of respondent which encourage unrelated conversation /
Total reactions

A similar index was constructed for the interviewers.

Total Amount of Interviewer Behavior Index Items

Number of times interviewer clarifies a question
Number of times interviewer probes on List A
Number of times interviewer flatters or praises respondent
Number of interviewer unrelated questions about respondent
Number of times interviewer gives suggestion to respondent
Number of times interviewer talks about herself, family, etc.
Length of post-interview conversation
Total number of probes
Reactions of interviewer which encourage unrelated conversation/
Total reactions

Observers also made ratings of the degree to which interviewers and respondents appeared to do things in a hurried way. These ratings were combined into two indices - one for the interviewer and one for the respondent. The following items were included.

Rating of Level of Respondent Behavior Index Items

Observer rating of whether or not respondent was willing to give time
Interviewer rating of whether or not respondent was willing to give time
Amount respondent is talking (first observer rating)
Amount respondent is talking (second observer rating)
Observer rating of how much respondent wanted to chat

Rating of Level of Interviewer Behavior Index Items

Did interviewer look up after reading each question
Did respondent have enough time to think about each item
Reactions of interviewer which discouraged unrelated conversation

Tables 5.1 and 5.2 present the relationships between the Reporting Index and the indices of the total amount of respondent and interviewer behavior. Both tables show strong relationships in the expected direction: there is less behavior of all kinds in those interviews in which the respondent reports less.

Table 5.3 shows the relationship between the two indices, which also turns out to be strongly positive: the level of behavior of the respondent is highly correlated with the level of behavior of the interviewer.

TABLE 5.1
REPORTING INDEX BY TOTAL
AMOUNT OF RESPONDENT BEHAVIOR

<u>Total Level of Respondent Behavior</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Very low	56	40	4	100	66
Somewhat low	45	42	13	100	100
Somewhat high	26	40	34	100	153
Very high	18	35	47	100	93

TABLE 5.2
REPORTING INDEX BY TOTAL
AMOUNT OF INTERVIEWER BEHAVIOR

<u>Total Level of Interviewer Behavior</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Very low	51	39	10	100	82
Somewhat low	38	43	19	100	124
Somewhat high	28	35	37	100	107
Very high	19	30	41	100	99

TABLE 5.3

TOTAL AMOUNT OF RESPONDENT BEHAVIOR
BY TOTAL AMOUNT OF INTERVIEWER BEHAVIOR

<u>Level of Interviewer Behavior</u>	<u>Level of Respondent Behavior</u>			N
	Low	High	Total	
Low	69	31	100	206
High	12	88	100	206

In Table 5.4 the Reporting Index is related to the amount of behavior recorded for both interviewer and respondent. Here, a pattern emerges which, while similar to that found with task behavior, is considerably more striking and very interesting. If the respondent's level of behavior is low, his reporting is poor, regardless of the level of behavior of the interviewer.

A respondent who is healthy might not engage in a great deal of task behavior, having little to report. However, if a respondent does not do much in the way of task performance nor engage in any interpersonal behavior, it is reasonable to think that he has rejected the interview and is doing all he can to finish it quickly and easily. The data in Table 5.4 may reflect the fact that the respondent must show a certain amount of receptivity to the interview if the interviewer is to influence him effectively. For the interviewer to do a good job may require this minimum amount of cooperation from the respondent. The data from this study permit further exploration of this, which promises to be fruitful.

The relationships between the indices of ratings and the Reporting Index are presented in Tables 5.5 and 5.6. The relationship between the rating of the respondent and his reporting is strong and in the expected direction; those respondents who were rated as being hurried and unwilling to engage in much behavior tend to report more poorly than others. There is no relationship, however, between the interviewer index and respondent reporting. To account for this, one should note that there were few ratings which measured the degree to which the interviewer tried to finish the interview quickly, so that the index may not be a good one. It may also be

TABLE 5.4

REPORTING INDEX BY TOTAL RESPONDENT
BEHAVIOR AND TOTAL INTERVIEWER BEHAVIOR

<u>Combination of Behavior Indices</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
<u>Respondent Low</u>					
Interviewer Low	48	43	9	100	142
Interviewer High	58	29	13	100	24
<u>Respondent High</u>					
Interviewer Low	34	38	28	100	64
Interviewer High	19	38	43	100	182

TABLE 5.5
REPORTING INDEX BY INDEX OF RATING
OF LEVEL OF RESPONDENT BEHAVIOR

<u>Rating of Level of Respondent Behavior</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Very low	43	45	12	100	93
Somewhat low	37	37	26	100	150
Somewhat high	32	35	33	100	85
Very high	20	40	40	100	84

TABLE 5.6

REPORTING INDEX BY INDEX OF RATING
OF LEVEL OF INTERVIEWER BEHAVIOR

<u>Rating of Level of Interviewer Behavior</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Very low	29	43	28	100	76
Somewhat low	36	38	26	100	84
Somewhat high	30	41	29	100	76
Very high	35	38	27	100	176

that few interviewers rush their respondents, so there is little or no true variation among them to be reflected in the index. The variation might have been particularly restricted because of the presence of observers. In any case, because of the lack of relationship between the interviewer index and reporting, no new information is gained by looking at the Reporting Index in relation to the combination of interviewer and respondent rated indices.

One further rating belongs in this section, for it, as clearly as any other, shows the relationship between the haste with which an interview is conducted and the quality of the respondents' reporting. Observers rated the pace of each interview in the sample. In this rating, they were to take into account factors such as the number of conditions reported and the number of persons in the family which tend to make an interview last longer, and simply rate the relative speed with which the interview was accomplished. How well they made this rating is, of course, not known; but the relationship between this rating and the Reporting Index, shown in Table 5.7, is very striking. Although, again, one must note that an interview in which few health events are reported will move much more rapidly than that in which many are reported. Table 5.7 surely also reflects respondent desire to cut short the interview.

In summary, there are very clear differences in the total amount of behavior that occurs when the respondent reports little and when he reports many health events. Both respondent and interviewer engage in less behavior when the respondent is low on the Reporting Index. The most important new information from this section, however, is the importance of respondent acceptance of his task. Respondents

TABLE 5.7

REPORTING INDEX BY OBSERVER
 RATING OF GENERAL PACE OF INTERVIEW

<u>Rating of Pace of Interview</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Much faster than average	53	41	6	100	51
Somewhat faster	40	39	21	100	96
Average	32	41	27	100	205
Much or somewhat slower than average	13	33	54	100	60

who neither elaborate their answers, ask for clarification of the questions, nor engage in unrelated conversation, report very poorly, no matter how much probing and clarifying the interviewer may do. Thus, one is led to think that the initial problem is to gain respondent acceptance of the interview and his participation in it. Once this is accomplished, the interviewer's efforts will be more effective in helping him to report better. Although this interpretation must be inferred, it can and will be further explored. Other methodological research suggests that obtaining a good interview is a two-stage process: first, obtaining respondent acceptance of the task, and second, helping him perform it well. Confirmation of this would be an important basis for the development of improved interview procedures.

FACTORS OUTSIDE THE INTERVIEW

The preceding sections have dealt with the behaviors and rated reactions of the participants as they performed the interview task and related personally to one another. Interviews do not occur in a vacuum, however. The interviewer walks into the home of a respondent who has a daily routine; and specific circumstances surrounding the time the interviewer arrives may have an important effect on the way the respondent accepts and performs his task. In fact, in some cases the situational variables may be the most important determinants of his reporting behavior.

Distractions

Frequently there are children or other adults present when the interview takes place. If the respondent is worrying about what the children are doing, or if he is watching television during the interview, his performance may not be high.

The effect of outside factors on the interview was recorded in two ways by the observer. First, during the interview, she noted each time something occurred which interrupted the interview or which distracted the attention of the respondent. Then, at the end of the interview, she made an overall rating of the degree to which distractions were present and played a part in the interview. The overall rating corresponded to the number of distractions recorded by the observer, and, consequently, only the rating is presented in relationship to the Reporting Index. It can be seen from Table 6.1 that frequent or serious distractions were present in few interviews (less than 14 per cent) and that reporting was as good when there

TABLE 6.1
REPORTING INDEX BY OBSERVER RATING OF THE
OVERALL EFFECT OF DISTRACTIONS ON THE INTERVIEW

<u>Effect of Distractions</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Moderate or serious	28	37	35	100	57
Slight	35	39	26	100	83
None	34	40	26	100	272

were some distractions as when there were none.

Time of the Interview

If the interviewer arrives at a very inconvenient time, some respondents will ask her to come back later. Interviewers prefer to complete the interview on the first call, if possible, however, and some respondents will not object even if it is inconvenient. Perhaps some respondents do not feel they can ask the interviewer to come back, while others think it will take only a few minutes.* In any case, some interviews do take place at times which are inconvenient for respondents.

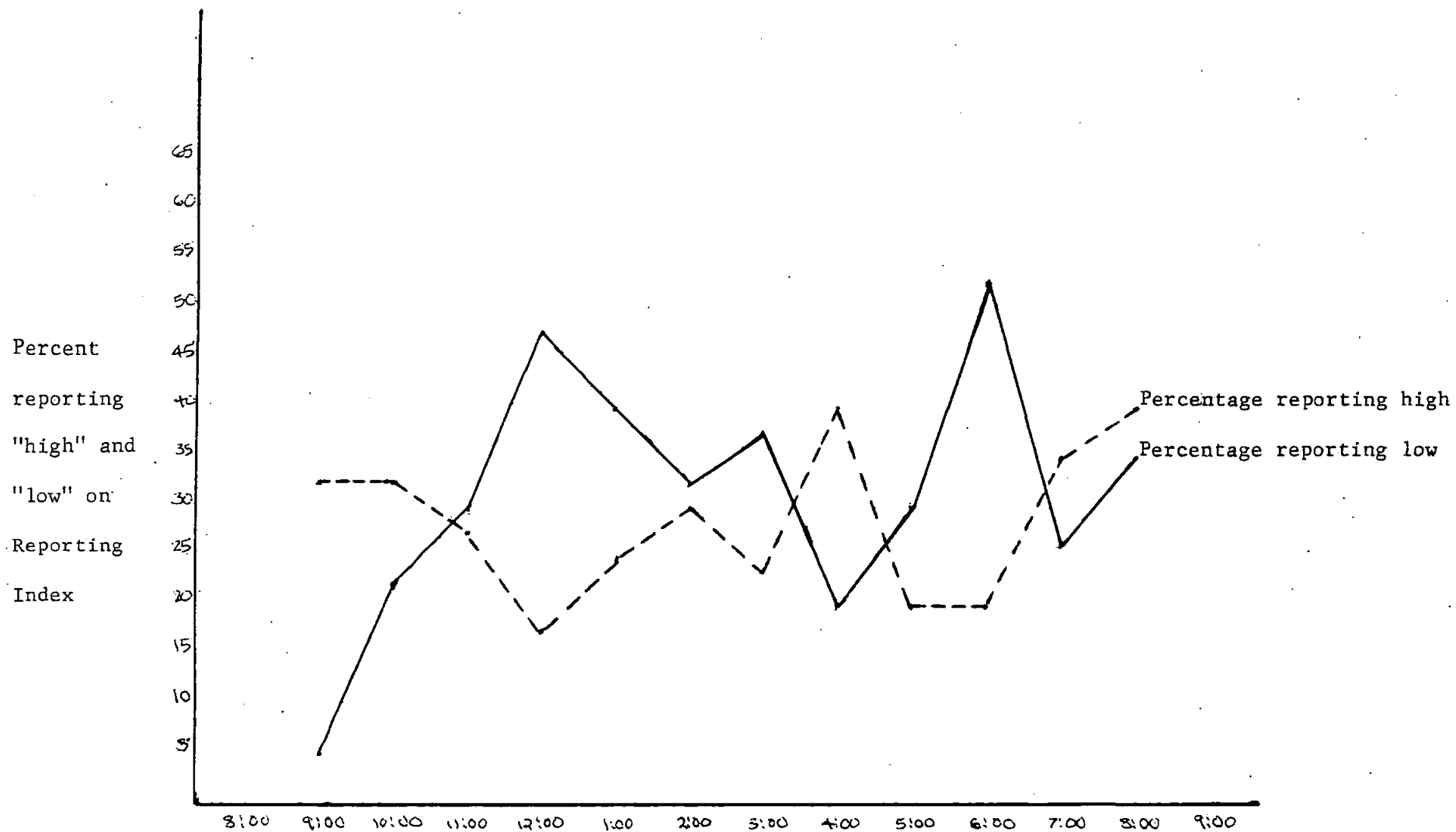
Figure 2 shows the scores on the Reporting Index by the time of day at which the NHS interview occurred. The solid line shows the percentage of respondents who fell into the "low" category on the Index, while the dotted line shows the percentage falling into the "high" category. Both give essentially the same picture. The worst interviews occur between 12:00 and 1:00 p.m. and between 6:00 and 7:00 p.m. Another bad period for the interview is between 1:00 and 4:00 in the afternoon.

Keeping in mind the most typical daily routine of Americans, these data can be interpreted fairly readily. The two worst times occur when the housewife is either preparing or eating meals. The early afternoon hours are popular times for naps and some household chores; and children come home from school between 3:00 and 4:00--the worst hour in the afternoon for reporting.

*In another report, "Respondents Talk about the NHS Interview," it was shown that many respondents do not anticipate that the interview will last more than 20 minutes, yet the average interview lasts more than half an hour.

FIGURE 2

PERCENT "HIGH" AND "LOW" ON REPORTING INDEX BY TIME
NHS INTERVIEW BEGAN



In the follow-up interview with respondents, the people in the sample were asked what they were doing when the interviewer came to the door. The answers to this question are related to the Reporting Index in Table 6.2. Consistent with Figure 2, respondents were likely to score "low" on the Reporting Index if they were contacted at mealtime, while they were resting, or while they were taking care of the children. On the other hand, if they were reading or watching television, they tended to report better.

The practical implications of these findings are not clear-cut. The best time to find some respondents at home is during mealtimes, yet it appears that answers given at that time are not very good. Data reported in another report show that there are no noteworthy differences in the demographic characteristics of those who are interviewed in the early afternoon or mealtimes. Thus, there is no basis for saying that the people interviewed at the "bad times" are atypical respondents, who might report poorly regardless of when they were interviewed. The data must be attributed to the competition the respondent feels for his time. It appears that conducting an interview at an inconvenient time may be an important source of underreporting in the NHS, and perhaps procedural changes should be considered to reduce this problem.

TABLE 6.2

REPORTING INDEX BY WHAT RESPONDENT
WAS DOING WHEN INTERVIEWER CAME

<u>Respondent was doing:</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Household chores	25	43	32	100	131
Eating	20	43	37	100	76
Caring for children	20	40	40	100	15
Watching T.V., etc.	40	26	34	100	53
Going out	29	36	35	100	28
Resting	30	30	40	100	33
Other	39	36	25	100	31
Nothing	24	44	32	100	41

RESPONDENTS AND REPORTING

Respondents' attitudes and perceptions about the NHS interview were measured in the follow-up interview. It was thought that some attitudes and perceptions are conducive to good reporting, while others are detrimental. One purpose of the interview was to attempt to identify differences between good and bad reporters, if any existed.

Specific Attitudes

Respondents were asked several questions on their feelings or the feelings they felt others might have about the NHS interview. Then, they were asked, in each case, to state the reason for the feelings they reported. Most of the reasons could be placed in one of five categories.

a) Concern about the time required for the interview, because it was inconvenient or lasted an inappropriate amount of time.

b) Concern about the questions asked because they were too personal, asked too much of the respondent, or were in a form that the respondent did not like--e.g., the questions were repetitious.

c) Concern because the respondent did not know enough about the purpose of the study or the uses to which his answers would be put.

d) Interest in the chance to be of public service or help with a worthy cause.

e) Interest in the chance to interact with the interviewer.

The initial hypothesis was that respondents who mentioned the first three considerations would be poorer reporters than those who

TABLE 7.1

REPORTING INDEX BY SELECTED
INDICES OF RESPONDENT CONCERN*

	Reporting Index				
	Low	Medium	High	Total	N
<u>Concern about time</u>					
Mentioned twice or more	31	42	27	100	144
Mentioned once	41	34	25	100	138
Not mentioned	28	42	30	100	130
<u>Concern about questions</u>					
Mentioned	28	43	29	100	205
Not mentioned	38	36	26	100	207
<u>Concern about not knowing purpose</u>					
Mentioned twice or more	31	40	29	100	144
Mentioned once	34	40	26	100	165
Not mentioned	37	37	26	100	103
<u>Interest in being of service</u>					
Mentioned twice or more	29	43	28	100	184
Mentioned once	36	36	28	100	141
Not mentioned	40	36	24	100	87
<u>Interest in talking with interviewer</u>					
Mentioned twice or more	34	45	21	100	144
Mentioned once	34	37	29	100	134
Not mentioned	34	35	31	100	134

*These indices were constructed using answers to both direct and indirect questions.

did not mention them, while those mentioning the fourth would be better than others. No hypothesis was advanced about whether or not the last factor would be an asset or detriment to good reporting.

In fact, however, none of these variables is markedly related to the Reporting Index, as Table 7.1 shows. The only moderately strong relationship is between the Reporting Index and mentioning some concern about the questions--and that relationship is the opposite from what was predicted: those who mentioned concern about this were more likely to report well in the NHS interview. One explanation for this would be that those who reported the most were asked more questions and, thereby, were exposed to more difficulty or embarrassment in the questions. There is a tendency for those who mention an interest in being of service to report better, and for those mentioning an interest in talking with the interviewer to report worse than others; but these relationships are weak. In general, however, the data do not indicate that the attitudes measured have much relationship to reporting.

The variables in Table 7.1 were constructed by counting the number of times that a respondent mentioned any of the above reasons. A special set of questions was asked at the beginning of the follow-up interview, in which the respondent was to report how another person might feel about the NHS interview. There was some evidence that these latter questions were particularly sensitive to respondent feelings. Another set of indices was constructed, therefore, using only the answers from the indirect section of the interview. Table 7.2 presents the results of these indirect indices in relation to the Reporting Index. As may be seen, the patterns look almost identical to those in Table 7.1; there is only one relationship between these attitudes and the dependent variable: those who report more are more likely to mention some concern about the questions.

TABLE 7.2

REPORTING INDEX BY SELECTED INDIRECT
INDICES OF RESPONDENT CONCERN

<u>Concern about questions</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Not mentioned	36	40	24	100	278
Mentioned	28	39	33	100	134
<u>Concern about not knowing purpose</u>					
Not mentioned	34	40	26	100	186
Mentioned	33	39	28	100	226
<u>Concern about time</u>					
Not mentioned	34	41	25	100	258
Mentioned	32	37	31	100	154
<u>Interest in talking with interviewer</u>					
Not mentioned	35	37	28	100	306
Mentioned	28	46	26	100	106
<u>Interest in being of service</u>					
Not mentioned	34	39	27	100	311
Mentioned	32	42	26	100	101

Table 7.3 shows the attitude indices (based on all questions) related to the number of visits to doctors reported by respondents for the reporting unit. There are, again, no very strong relationships. There is a tendency, however, for those respondents who mention that they enjoyed talking with the interviewer to report fewer visits to doctors. This may mean that such people were more interested in the chance to talk than they were in performing their task.

To further explore the idea that the interview experience is different for good reporters than for poor reporters, hypotheses were examined which could account for the low correlation between the attitudinal indices and reporting. First, perhaps some suppressor variable was acting to reduce the attitudinal relationships. One possibility was discussed in the last section: the time of day the interview occurred. It could be, for example, that if the respondent is interviewed at a poor time, his reporting is poor regardless of his attitudes; but if the interview occurs at a good time, his attitudes help to determine the quality of his performance.

To test this idea, the sample was divided approximately in half by whether or not the interview occurred at a good time or a bad time as indicated by Figure 2 in the preceding section. The attitude indices were then related to reporting within each half of the sample. Table 7.4 shows that if the interview occurred at a good time, reported interest in talking with the interviewer, if anything, was related to reporting well in the NHS. If the interview occurred at an inconvenient time, however, those who mentioned an interest in talking with the interviewer did not report well. If a

TABLE 7.3

NUMBER OF VISITS TO DOCTORS REPORTED FOR REPORTING
UNIT BY SELECTED INDIRECT INDICES OF RESPONDENT CONCERN

<u>Concern about questions</u>	<u>Number of Visits to Doctor</u>				N
	None	One	Two or more	Total	
Not mentioned	68	21	11	100	207
Mentioned once	64	19	17	100	107
Mentioned twice or more	62	26	12	100	98
<u>Concern about not knowing purpose</u>					
Not mentioned	63	23	14	100	104
Mentioned once	70	19	11	100	164
Mentioned twice or more	62	22	16	100	144
<u>Concern about time</u>					
Not mentioned	66	23	11	100	130
Mentioned once	65	21	14	100	138
Mentioned twice or more	65	20	15	100	144
<u>Interest in talking with interviewer</u>					
Not mentioned	57	28	15	100	134
Mentioned once	64	22	14	100	134
Mentioned twice or more	74	14	12	100	144
<u>Interest in being of service</u>					
Not mentioned	67	23	11	100	87
Mentioned once	66	23	11	100	141
Mentioned twice or more	65	20	15	100	184

TABLE 7.4

REPORTING INDEX BY RESPONDENT INTEREST IN
TALKING WITH INTERVIEWER AND WHETHER TIME
OF DAY INTERVIEW TOOK PLACE WAS GOOD OR BAD*

	Reporting Index				
<u>Interview took place</u> <u>at good time</u>	Low	Medium	High	Total	N
Interest in talking:					
Not mentioned	32	36	32	100	69
Mentioned	23	47	30	100	146
 <u>Interview took place</u> <u>at bad time</u>					
Interest in talking:					
Not mentioned	35	34	31	100	65
Mentioned	45	34	21	100	132

*Interview times were divided in half on basis of whether reporting was high or low (see Figure 2). At "good" times, reporting tended to be "high".

respondent does not have much time or feels hurried, perhaps an interest in talking with the interviewer reduces the time, effort and attention he devotes to reporting accurately. If it occurs at a convenient time, however, respondents have time for a certain amount of friendly interaction and still are able to report well. In fact, the table suggests that such interaction may be an asset for those who have time.

No other differences in the relationship between attitudes and reporting appeared when time of the interview was controlled. The above relationships illustrate, however, the complex way that attitudes may enter into the reporting process, with an attitude that is an asset for one group being a detriment for another. It is such relationships that the further analysis will be designed to find.

A second hypothesis is that different considerations are important to people from different demographic groups. To examine this, the relationships between the attitudinal indices and the Reporting Index were run again, controlling for respondent education and age.

When the sample was divided by whether or not the respondent had graduated from high school, the following results appeared, as shown in Table 7.5

1. The high school graduates who mentioned some concern about the questions reported much better than those who did not mention any such concern; but this relationship was slight or non-existent for those who had not completed high school.

2. For high school graduates, but not for those with less education, mentioning some concern about not knowing the purpose of

TABLE 7.5

REPORTING INDEX BY EDUCATION OF RESPONDENT
AND SELECTED INDICES OF RESPONDENT CONCERN

	Reporting Index				
<u>Concern about questions</u>	Low	Medium	High	Total	N
<u>Not high school grad</u>					
Mentioned	32	38	30	100	100
Not mentioned	37	38	25	100	118
<u>High school grad</u>					
Mentioned	23	48	29	100	103
Not mentioned	39	33	28	100	87
					*
<u>Concern about not knowing purpose</u>					
<u>Not high school grad</u>					
Mentioned	35	38	27	100	154
Not mentioned	33	39	28	100	64
<u>High school grad</u>					
Mentioned	28	42	30	100	153
Not mentioned	41	35	24	100	37
					*

*Total N = 408 due to 4 not ascertained in education

the NHS survey correlated positively with reporting well.

When the sample was divided by whether or not the respondent was 55 years of age or over, the following relationships were obtained between the attitudes mentioned in the follow-up interview and the Reporting Index, as shown in Table 7.6.

1. If concern about not knowing the purpose of the study was mentioned by a young respondent, he was likely to have reported well in the NHS. If it was mentioned by an older respondent, however, there is a slight tendency for him to have reported less well than others.

2. If a young respondent mentioned an interest in helping or being a good citizen, he was likely to have reported well. This relationship is smaller for those over 55.

3. If an older respondent said that talking with the interviewer was a reason for liking the interview, he was slightly less likely to report well than other old respondents in the NHS. This relationship does not hold for those respondents who are under 55, however.

The relationships are not strong. They suggest some ideas, however which can be pursued. For example, an interest in talking with the interviewer on a personal basis seems to be a detriment to reporting for some people--e.g. those interviewed at inconvenient times and older respondents. Further analysis within demographic groups or using multiple controls may add to the understanding of the role of attitudes in respondent performance. The data clearly do not indicate a simple relationship between attitudes and reporting, however. It may well be that respondent attitudes regarding the NHS are so weak and ill-formed that they, in fact, have little effect on respondent performance.

TABLE 7.6

REPORTING INDEX BY AGE OF RESPONDENT AND
SELECTED INDICES OF RESPONDENT CONCERN

	Reporting Index				
	Low	Medium	High	Total	N
<u>Concern about not knowing purpose</u>					
<u>Under 55 years</u>					
Mentioned	28	46	26	100	202
Not mentioned	38	38	28	100	69
<u>Over 55 years</u>					
Mentioned	40	29	31	100	107
Not mentioned	35	35	30	100	34
<u>Interest in being of service</u>					
<u>Under 55 years</u>					
Mentioned	28	44	28	100	214
Not mentioned	38	43	19	100	56
<u>Over 55 years</u>					
Mentioned	38	33	29	100	112
Not mentioned	43	20	37	100	30
<u>Interest in talking with interviewer</u>					
<u>Under 55 years</u>					
Mentioned	31	45	24	100	185
Not mentioned	32	40	28	100	85
<u>Over 55 years</u>					
Mentioned	40	32	28	100	94
Not mentioned	35	27	38	100	48

Overall Reaction to Interview

As was noted above, respondents were asked to summarize the way they felt about the interview and the way they thought someone else might feel about it. These answers are combined into two indices of overall reaction to the interview: one from the questions which directly asked about the respondent's own feelings, one from the indirect questions.*

One might predict that those who reported best would react most favorably to the interview. In the interview which was conducted on the day following the NHS interview, however, those who appeared most negative were, if anything, the better reporters, as Tables 7.7 and 7.8 show; and there is a general lack of relationship between the indices of respondent feeling and the Reporting Index.

It is interesting to note that there is precedent for a negative response to an attitude question to go along with good performance. Industrial studies of productivity show that the most productive workers are likely to express the most criticism of their jobs. Such data are interpreted as indicating that these people are sufficiently involved in their work to be concerned about ways to make their jobs better, while less interested workers do not care how the job is done and report that "everything is fine." Similarly, some of the better respondents may be concerned enough about the interview to suggest ways in which the interview procedure could have been improved - thereby appearing negative in the indices of respondent reaction. Some negative responses, therefore, may be reflecting

*A description of these indices and their construction is in the Appendix of "The Respondents Talk About The NHS Interview".

TABLE 7.7
REPORTING INDEX BY
DIRECT QUESTION INDEX

<u>Direct Question Index</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Positive	34	39	27	100	183
Neutral	35	40	25	100	71
Negative	32	40	28	100	158

TABLE 7.8
REPORTING INDEX BY
INDIRECT QUESTION INDEX

<u>Indirect Question Index</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Positive	30	44	26	100	140
Neutral	34	38	28	100	113
Negative	35	35	30	100	159

an essentially constructive orientation on the part of respondents who mention such concern.

Another interesting interpretation is suggested by Table 7.8. Those who are negative on the indirect index - which there is some reason to take as most sensitive* - tend to report a lot or a little; they are less likely to fall in the middle category on the Reporting Index. One is led to speculate that those reporting a negative overall feeling about the NHS interview include two types of respondents. Type 1 was negative with respect to the NHS interview and reported little. Type 2 was willing to cooperate with the NHS, reported well, but felt that too much was asked of him and later felt negatively about the NHS interview. In other words, negative feelings can lead to poor reporting or can result from good reporting.

Further support for this view comes from those who were most negative: those who refused to grant the follow-up interview. Although there were only thirteen refusals, and the conclusions must be very tentative, the refusals tended to fall into two groups. One group reported very little information in the NHS interview, engaged in little unrelated conversation, and tended to be rated as reacting negatively to the NHS interview. The other group reported more than average, their interviews lasted longer, they chatted a good deal with the interviewer and appeared to accept the task very well - yet they refused to be interviewed again. Apparently, they felt they had contributed enough.

These data illustrate a problem with interpreting the reactions

*See "Respondents Talk About the NHS Interview".

expressed in the follow-up interview: the attitudes expressed may or may not represent the attitudes which influenced the respondent's task performance in the NHS. Some of the reported attitudes may be latent reactions felt after the respondent had thought about the interview, e.g. the length of time it took or the personal questions, and thus a respondent could have expressed negative reactions in the follow-up interview without actually having felt that way during the NHS interview. This may be one reason that strong direct relationships between attitudes expressed the next day and actual task performance during the NHS interview do not appear.

A final hypothesis, mentioned previously, is that the NHS interview is not a significant event for respondents. Consequently, their feelings may be very weak and there may be little real variation among respondents in their feelings.* In that case, factors other than respondent feelings would more effectively discriminate between good reporters and poor ones.

*Some evidence for this is presented in "Respondents Talk About The NHS Interview".

Perceptions and Information

Three general topics are included under this heading. First, respondents were asked a number of questions to ascertain their level of information about the NHS and its purpose. Second, they were asked several questions about their perception of the task they were supposed to perform. Third, they were asked about their perception of the interviewer. These topics will be considered individually.

Information

It was thought that those who had the most information about the study would be most likely to report well. Knowing who conducts the study should allay fears about the legitimacy of the research, while knowing what is to be done with the data should heighten feelings of citizenship and interest in making the study a success.

In a previous report*, it was shown that respondents tend to have little information about the study and that their answers to the questions asked are fairly consistent: those who know little about one part of the study know little about the others. Table 7.9 shows the Reporting Index by the answers to those questions designed to measure information about the purpose of the NHS. There is no apparent relationship.

There are at least two explanations of why level of information does not relate to reporting. First, the level of information about the study is quite low, even for those who have the most information; and many of those rated high in information were so rated because

* See 'A Report on Respondents' Reading of the Brochure and Letter and an Analysis of Respondents' Level of Information'.

TABLE 7.9

REPORTING INDEX BY LEVEL OF
INFORMATION ABOUT PURPOSE OF NHS*

<u>Level of Information</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
High	34	37	29	100	170
Medium	28	36	36	100	53
Low	35	41	24	100	173
Not ascertained	--	--	--	--	16

*Question 21: "Do you know why surveys like this are conducted? "

they know about surveys in general - not because they had specific information about the NHS. If a group of respondents with a high level of information had been found, they might well have reported better than others. Second, knowing about the study may be an asset only for certain groups - e.g. the well educated - or under certain conditions - e.g. when the interview occurs at a convenient time. These ideas will be subjected to further analysis.

Perception of task

Two questions were asked specifically about the respondents' perception of the task.

Did the interviewer want you to report everything, or was she interested only in fairly important things?

Did the interviewer want you to be exact in the answers you gave, or were general ideas good enough?

The answers to these questions can be interpreted in two ways. First, those who think the interview only requires generally correct answers about the more important events will be less likely to report fully and accurately. Second, those who do not want to take the time and energy to report well may justify their performance by telling themselves and the follow-up interviewer that little was expected of them.

Tables 7.10 and 7.11 show that the answers to the first question relate slightly to the Reporting Index, but the answers to the latter question relate more sharply to it. Both relationships are in the expected direction, though neither is statistically significant.

Perception of interviewer

The interviewer plays an important role in the interview for a variety of reasons, of course. Most important, she is the one to

TABLE 7.10

REPORTING INDEX BY WHETHER RESPONDENT
THOUGHT INTERVIEWER WANTED EVERYTHING
OR FAIRLY IMPORTANT THINGS

<u>Interviewer wanted:</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Everything	32	40	28	100	312
Fairly important things	39	36	25	100	80
Not ascertained	--	--	--	--	20

TABLE 7.11

REPORTING INDEX BY WHETHER RESPONDENT THOUGHT
INTERVIEWER WANTED EXACT OR GENERAL ANSWERS

<u>Interviewer wanted:</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Exact answers	30	38	32	100	223
General answers	38	39	23	100	168
Not ascertained	--	--	--	--	21

whom information - often fairly personal - is to be given, and she is the one who must direct the respondents' behavior. Hence, one would anticipate that the perception of the interviewer would have an effect on the way the respondent performed his task.

One thing of interest is whether the interviewer is thought to be a highly skilled person or not. Two questions were asked relevant to this issue: one about the amount of education the respondent thought the interviewer had had, and one about the amount of special training that was required to be a NHS interviewer. It would seem logical that the respondent who saw the interviewer as highly skilled would be more willing to report personal information and to work hard to report accurately. Tables 7.12 and 7.13 show, however, that there is little or no relationship between the level of skill attributed to the interviewer and the Reporting Index.

A more complex way of measuring the perception of the interviewer was devised in the following question.

What kind of a person would you say the interviewer was? Which of these remind you most of the interviewer: that is, which was it most like talking to?

- a. A close friend
- b. A secretary or clerk in an office
- c. A salesgirl in a department store
- d. A nurse
- e. A door-to-door salesman
- f. A neighbor
- g. A social worker
- h. A female doctor
- i. A Community Chestworker
- j. A teacher
- k. A female lawyer

There are only four single alternatives which were selected often enough to permit meaningful comparison: social worker, neighbor, secretary, and close friend. Those who said the interviewer was most like one of the first three were about average on the Reporting Index.

However, those who selected "close friend" reported more poorly than average. This is another piece of evidence that liking the interviewer as a person may not be an asset to reporting.

At a more general level, one would think that social workers, teachers, nurses, doctors, and lawyers would all be thought of as professionals who were basically engaged in public service and helping others. A close friend or neighbor, on the other hand, is someone to whom one relates informally and with whom interaction tends to be friendly. Secretaries and salespeople, finally, are neither particularly close nor particularly motivated to be of service. Combining the alternatives on this basis, one sees that there is little relationship in Table 7.14 between the Reporting Index and the respondents' report of what the interviewer was most like, except for the slight indication that the friendly relationship is not as good for some respondents. Other combinations lead to a similar lack of results.

Summary

The respondents' perception of the task is related somewhat to reporting, but his level of information about the survey and his perception of the training and education of the interviewer do not relate to the Reporting Index in a consistent way. Further analysis is needed to determine if these variables are important to reporting in more complex ways.

Conclusion

The measures from the follow-up interview with the respondent do not account for as much variance in reporting as might be expected on a priori grounds. Throughout this section, suggestions

TABLE 7.12

REPORTING INDEX BY RESPONDENTS'
PERCEPTION OF INTERVIEWERS' EDUCATION

<u>Perceived Education of Interviewer</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
High school or less	35	40	25	100	186
Some college	34	33	33	100	67
College graduate	31	42	27	100	144
Don't know	--	--	--	--	11
Not ascertained	--	--	--	--	4

TABLE 7.13

REPORTING INDEX BY RESPONDENTS'
PERCEPTION OF INTERVIEWERS' SPECIAL TRAINING

<u>Perception of Inter- viewer Training</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
None to one month	34	39	27	100	122
One to six months	35	36	29	100	163
Seven months or more	30	44	26	100	97
Don't know	--	--	--	--	22
Not ascertained	--	--	--	--	8

TABLE 7.14

REPORTING INDEX BY WHAT RESPONDENT
THOUGHT INTERVIEWER WAS MOST LIKE

<u>Interviewer was like:</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
A friend or neighbor	37	41	22	100	76
A professional person	33	39	28	100	256
A salesperson	32	38	30	100	80

have been made as to why one measure or another did not relate to the Reporting Index as was anticipated. Although some of the measures might be improved, one must conclude that on the basis of the data presented, respondent attitudes are not directly determining respondent reporting.

Further study of the relationships between the measures of attitudes and respondent behaviors other than reporting will be undertaken, as well as analysis within specific groups of respondents. The relationship between reported attitudes and behavior is an important problem in social science theory as well as an issue of great importance in the specific understanding of survey interviews. The data from this study provide an excellent opportunity to learn more in this area which will be exploited. In the effort to design the best possible interview procedures, finding that respondent attitudes have little effect on reporting would be as significant as finding that they are critical.

INTERVIEWERS AND REPORTING

Considerable research has been focused on the interviewer as the source of response error. Early studies showed that the interviewer's attitudes biased attitude responses; later studies showed that well-trained interviewers do not introduce such bias. Yet, there is also a body of literature which indicates that some do a better job than others, regardless of their training. The quality of the job depends on such things as their attitude toward it, and their morale and perception of how the job should be done. The NHS interviewers who participated in this study were interviewed about some of these topics.

Orientation to job

Whether or not the interviewer has a positive and constructive approach to her job may have an effect on how well she performs. There are six measures which may reflect the degree to which interviewers have such an orientation, but to understand some of them, the discussion from the previous section should be reviewed.

Employees who offer criticism of the way they are asked to perform their tasks have been found in several studies to be the most productive workers. In addition, in this particular study, interviewers were told that one of the purposes of the research was to develop improved survey procedures. Hence, offering suggestions and criticisms in the interview was particularly likely to be viewed as constructive and something which an interviewer who was concerned about raising the quality of her work would do.

Table 8.1 can be interpreted in this light. Interviewers were

TABLE 8.1

*
REPORTING INDEX BY NUMBER OF PROBLEMS
WITH QUESTIONNAIRE MENTIONED BY INTERVIEWER

<u>Number of Problems Mentioned</u>	<u>Reporting Index</u>				**
	Low	Medium	High	Total	N
None	43	41	16	100	46
One	33	39	28	100	138
Two	32	36	32	100	179
Three or more	29	49	22	100	49

*This does not include the frequently mentioned problem of remembering dates.

**In this and other tables in this section, the answers given by the 35 NHS interviewers are related to the reporting of all of the respondents they interviewed. Although the number of interviewers was only 35, the number of interviews in which a given attitude could help or hinder reporting was 412. The attitudes of those interviewers who interviewed the most respondents are slightly weighted by this procedure, but the differences in weighting are slight.

asked about problems that respondents have with the NHS questions. Some interviewers said they were not aware of any problems, while others mentioned as many as three particular parts of the interview that caused some problem. As the Table shows, those who mentioned more problems tended to obtain better reporting from respondents.

Similarly, interviewers were asked about whether they would suggest any changes in the NHS procedures. Table 8.2 shows that those who did suggest one or more changes were slightly more likely to obtain good reporting.

One might think that those interviewers who feel they are under pressure to meet production schedules or who feel the interview is too long would hurry their respondents and obtain poorer reporting. On the other hand, mentioning this may simply reflect the positive orientation toward the work discussed above. As Tables 8.3 and 8.4 show, if anything, those who say they feel some pressure and feel that interviews are too long obtain better reporting from their respondents.

Two other very slight relationships are relevant here, for they support the correlation between a positive orientation to the job and the quality of the interviewer's work. Interviewers were asked what they liked about their jobs and about the value of their work. Those who said that they liked the job because it was important and worthwhile obtained somewhat better reporting. In addition, interviewers were asked whether they would like to have more information about the NHS and its uses. Those who said they were not interested in obtaining more information obtained slightly

TABLE 8.2

REPORTING INDEX BY WHETHER OR NOT
INTERVIEWERS SUGGEST CHANGES IN NHS PROCEDURES

<u>Procedural changes:</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Suggested	31	40	29	100	191
Not suggested	36	38	26	100	181
Don't know	32	32	36	100	25
Not ascertained	--	--	--	--	15

TABLE 8.3

REPORTING INDEX BY WHETHER OR NOT INTERVIEWERS
FELT UNDER PRESSURE TO COMPLETE INTERVIEWS QUICKLY

<u>Interviewer said:</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
She felt under pressure	28	44	28	100	150
She "takes the time needed"	33	42	25	100	162
She did not feel pressure	47	26	26	100	53
Don't know	--	--	--	--	11
Not ascertained	33	31	36	100	36

TABLE 8.4

REPORTING INDEX BY WHETHER OR NOT INTERVIEWERS
FEEL THAT INTERVIEWS USUALLY LAST TOO LONG

<u>Are interviews too long?</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Yes	32	38	30	100	176
Qualified*	38	37	25	100	87
No	34	43	23	100	111
Don't know	29	33	38	100	24
Not ascertained	--	--	--	--	14

*The most frequent response coded as "qualified" was that interviews were too long for large families.

less reporting from their respondents (Tables 8.5 and 8.6).

Several of these relationships are very slight, and are only mentioned because the combination of indices point in the same direction: that interviewers with a positive, constructive orientation to their jobs do obtain better reporting. While it is not a surprising finding nor an extremely strong one, the data are certainly consistent enough to warrant further study.

Goals in the interview

Interviewers were asked a number of questions about kinds of respondents they like best and procedures they prefer. After they had stated each preference, they were asked to explain the reasons for their preference. These reasons were coded into three categories: concern about the accuracy of the data, concern about the speed and efficiency of the interview, and concern about the pleasantness of the interview. Interviewers were, then, given a score for the number of reasons they gave which fell into each category.

The theory behind this measure is that the most important concern of the interviewer is the one she will use most frequently to evaluate respondents and procedures. Table 8.7 shows the relationship between the number of times the interviewer showed concern about the accuracy of the data and the Reporting Index for her respondents in the study. Those who express concern about accuracy obtain somewhat better reporting. The reason for the relationship is not self-evident. Perhaps those who are particularly concerned with accuracy have identified a bit more with the goals of the research, and work somewhat harder than others. Perhaps they are more likely to probe a "no" response, or communicate the importance of reporting accurately. In any case, this relationship warrants further study.

TABLE 8.5

REPORTING INDEX BY NUMBER OF TIMES
INTERVIEWER SAYS HER WORK IS WORTHWHILE

<u>Number of times mentioned</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Not mentioned	34	42	24	100	74
Mentioned once	34	40	26	100	283
Mentioned twice or more	31	33	36	100	55

TABLE 8.6

REPORTING INDEX BY WHETHER OR NOT INTERVIEWERS
WANT MORE INFORMATION ABOUT THE STUDY

<u>Want more information?</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Yes	32	39	29	100	289
No	38	34	28	100	99
Not ascertained	29	58	13	100	24

TABLE 8.7

REPORTING INDEX BY NUMBER OF TIMES
INTERVIEWER MENTIONS CONCERN ABOUT ACCURACY

<u>Number of times mentioned</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Not mentioned or once	33	34	23	100	133
Mentioned two or three times	39	39	22	100	139
Mentioned four or more times	29	36	35	100	140

Interestingly, Tables 8.8 and 8.9 show that the other two indices have no apparent effect on reporting. Apparently, concern about having an efficient interview or concern about having a pleasant interview are neither conducive nor detrimental to obtaining good reporting. Of the three interviewer goals measured, only a concern for the accuracy of the data is directly reflected in the quality of reporting.

Orientation to respondents

Interviewers have different preferences in the way they relate to respondents and attempt to obtain their cooperation. One possible basis of respondent cooperation is his knowledge about the survey. Interviewers had several opportunities to state that they thought respondent information was helpful in obtaining a good interview. The number of times the interviewer mentioned this was made into an index, which is presented in relation to the Reporting Index in Table 8.10. It may be seen that there is not any apparent relationship between the two measures. However, in Table 8.11 the answers to a single direct question on the value of respondent information are related to the Reporting Index. There is some tendency for those who say respondents should have information to obtain better reporting. As there is no direct relationship between the amount of information respondents have and reporting, one is led to think that those interviewers who think information is valuable may establish a distinctive kind of relationship with respondents--that their interest in explaining the study may be as important to good reporting as the information they communicate.

TABLE 8.8

REPORTING INDEX BY NUMBER OR TIMES
INTERVIEWER MENTIONS CONCERN ABOUT EFFICIENCY

<u>Number of times mentioned</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Not mentioned	29	40	31	100	100
Mentioned once	39	38	23	100	186
Mentioned twice or more	29	42	29	100	126

TABLE 8.9

REPORTING INDEX BY NUMBER OF TIMES INTERVIEWER
 MENTIONS CONCERN ABOUT PLEASANTNESS OF INTERVIEW

<u>Number of times mentioned</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
None	30	40	30	100	133
One	38	40	22	100	114
Two	37	38	25	100	89
Three or more	30	37	33	100	76

TABLE 8.10

REPORTING INDEX BY DESIRABILITY OF RESPONDENTS
HAVING INFORMATION ABOUT THE STUDY

<u>Number of times mentioned</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Not mentioned	28	39	33	100	76
Mentioned once	38	45	17	100	147
Mentioned twice	32	35	33	100	189

TABLE 8.11

REPORTING INDEX BY INTERVIEWERS' ANSWERS TO THE QUESTION
 "DO YOU THINK IT MAKES ANY DIFFERENCE HOW MUCH RESPONDENTS
 KNOW ABOUT THE PURPOSES AND USES OF THE SURVEY
 AS TO HOW COOPERATIVE THEY ARE?"

<u>Does it make a difference?</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Yes	32	35	33	100	200
No	37	42	21	100	189
Not ascertained	--	--	--	--	23

Another way to obtain respondent cooperation is to establish a friendly relationship. Interviewers had several opportunities to mention the importance of this in obtaining good cooperation. Table 8.12 shows that, if anything, those who do not mention friendly interaction with the respondent as a basis of cooperation obtain better reporting, though there are few instances where it was not mentioned. It is unlikely that a good relationship is not an asset to good interviews. An essential task of the interviewer, however, is to induce the respondent to work hard to do his task well, sometimes perhaps at the expense of making it easy and pleasant for him. It may be that this is partially reflected in the relationship in Table 8.12.

Establishing a friendly relationship is only one way to conduct a good interview; some may find a personal approach useful, while others do not. Some relevant data on this point come from two questions. In the first, interviewers were asked whether they thought respondents liked the interviewer to stick to her job or to chat a bit during the interview. As Table 8.13 shows, those who think respondents prefer to "visit a little" obtain about the same level of reporting as those who think respondents prefer a businesslike, efficient interview. Similarly, when interviewers were asked about their own preference in this matter, those who said they prefer to stick strictly to the task obtained about the same rate of reporting as those who said they like to visit some.

In summary, there is an indication that it is an asset for interviewers to think respondents should have information about the survey, but there is little evidence that it makes any difference

TABLE 8.12

REPORTING INDEX BY NUMBER OF TIMES INTERVIEWER
 MENTIONS VALUE OF ESTABLISHING GOOD RELATIONSHIP

<u>Number of times mentioned</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Not mentioned	22	44	24	100	45
Mentioned once	34	36	30	100	195
Mentioned twice	35	41	24	100	172

TABLE 8.13

REPORTING INDEX BY INTERVIEWER PERCEPTION OF
RESPONDENT PREFERENCE IN MANNER OF CONDUCTING INTERVIEW

<u>Respondents prefer:</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Businesslike interview	33	38	29	100	149
Some of both	39	40	21	100	117
To visit a little	30	40	30	100	146

TABLE 8.14

REPORTING INDEX BY INTERVIEWER PREFERENCE
IN MANNER OF CONDUCTING INTERVIEW

<u>Interviewers prefer:</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
Businesslike interview	32	42	26	100	262
Some of both*	36	33	31	100	105
To visit a little	33	40	27	100	45

*This category also includes interviewers who said that they visited with respondents if they thought this would mean a better interview.

whether or not interviewers stress chatting with respondents and building a friendly relationship. It may be that such an orientation is helpful to some interviewers and not for others.

Demographic characteristics

Tables 8.15 and 8.16 show the interviewer's age and her family income by the Reporting Index. It is fairly clear that neither of these variables has a consistent effect on an interviewer's success, as measured by the Index. However, Table 8.17 shows a rather interesting relationship between interviewer education and reporting. The best interviewers appear to be those that have graduated from high school but have not attended college. Interviewers who have attended college obtain the least amount of reporting, while those who did not graduate from high school fall somewhere in the middle. Perhaps the data can best be interpreted in terms of the interviewer's interest in her job. It is possible that being an interviewer is somewhat more prestigious and challenging for someone who has not attended college than for someone who has. The difference, therefore, between those who did and did not attend college fits in with what was said earlier about the importance of the interviewer's attitude toward her job. On the other hand, the slight difference between high school graduates and those who did not graduate may reflect differences in ability.

Conclusion

The full implications of the above findings will only be understood when interviewer responses have been related to other specific behaviors in the interview situation. One important goal is certainly to find out what the most successful interviewers do differently from others, so that the others can be trained to do the same things.

TABLE 8.15

REPORTING INDEX BY
AGE OF INTERVIEWER

<u>Age of Interviewer</u>	<u>Reporting Index</u>				N
	Low	Medium	High	Total	
30-40 years	34	36	30	100	94
41-50 years	31	41	28	100	164
51-60 years	38	39	23	100	111
61-70 years	34	45	21	100	29
Not ascertained	--	--	--	--	14

TABLE 8.16
REPORTING INDEX BY
INCOME OF INTERVIEWER

<u>Income of interviewer</u>	<u>Reporting Index</u>				
	Low	Medium	High	Total	N
\$ 0-3999	26	48	26	100	50
4000-6999	40	34	26	100	95
7000-9999	30	42	28	100	122
10,000 or more	34	38	28	100	145

TABLE 8.17

REPORTING INDEX BY
EDUCATION OF INTERVIEWER

<u>Education of Interviewer</u>	<u>Reporting Index</u>				<u>N</u>
	<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Total</u>	
Below high school	31	44	25	100	52
High school graduate	32	36	32	100	193
Any college	37	42	21	100	153
Not ascertained	--	--	--	--	14

While proper training in procedures is undoubtedly important, the data point to another aspect of interviewer preparation: the development of a constructive attitude toward the job. The best interviewers indicate a high acceptance of the goals of the survey by stressing the importance of obtaining accurate answers. They tend to make more criticisms of the questionnaires and procedures, thereby evidently showing greater concern for the quality of the work they do. There is also a slight tendency for them to think they are doing important work, and to show an interest in finding out more about its value.

In contrast to the importance of signs that an interviewer is concerned with doing her job well and collecting accurate information, the particular preferences she has about the way she obtains that information appear relatively unimportant. Being concerned that the interview is pleasant or efficient neither helps nor hinders reporting; and interviewers who see friendly unrelated conversation as a part of the interview perform no worse, but no better, than those who minimize its importance. The only indication that one interviewing style is superior to another is that those who say that respondents should have information about the survey seem to obtain a little better reporting. Beyond the thorough training that each of these interviewers has had, it appears that the desire to do the job well is the most important element in interviewer success.

These conclusions are clearly very tentative and should be taken as only speculative. Further, they apply only to NHS interviews and within the range of behaviors specified in NHS procedures. Some of the relationships on which they are based are very weak and may be due to chance. Yet, the data are relatively consistent, and are in line with other studies of employee performance.

CONCLUSION

In this report, the direct relationships between the measures in the instruments used and reporting in the NHS have been presented. Because of the unique comprehensiveness of the data, there is still considerable analysis that can and should be done. For example, combination of interviewer and respondent characteristics may be important: their relative ages, educations, or incomes; whether or not they share certain attitudes; whether or not the respondent is the type of person the interviewer likes to interview. Increased understanding of the measures and of the dynamics of the interview process will come as respondent and interviewer attitudes are linked to specific behaviors observed, in addition to reporting. Analysis of the effect of attitudes and behaviors within specific demographic or attitudinal groups may also yield fruitful results.

The data were too extensive to complete all possible analysis during the time allotted. Further, because this was an exploratory study of problems which have never been studied in this way, it was not possible to predict which areas of analysis would prove most fruitful. Although the results do not provide a basis for specific recommendations for improving procedures, nor a complete description of the critical variables affecting reporting, they do lay the essential groundwork for more detailed analysis. Furthermore, it should not be overlooked that in addition to some of the positive findings, a number of the negative findings are important in discounting tenable hypotheses and narrowing the focus of attention to the most salient and potentially fruitful topics.

Although it is not possible to summarize all of the results, the following are the more noteworthy findings presented in this report.

1. A respondent who reports well is also likely to elaborate his answers, ask for clarification of questions, and do other things which suggest effort to do his job well. Although interviewers also do more probing and clarifying when the respondent reports well, respondent task related behavior is most important to a good interview.

2. Good interviews, those in which the respondent appears to report well, are also typified by a high level of unrelated conversation. Unrelated conversation is most likely to be initiated by the respondent, but the interviewer tends to encourage it and initiate some of her own when reporting is high. Good interviews are also more likely to have one minute or more of conversation between respondent and interviewer after the interview is over. In general, these correlations are not as strong as the task related correlations discussed above. Many good interviews have little or no unrelated conversation.

3. If the respondent engages in little behavior, either related or unrelated to the interview task, he is unlikely to report well, regardless of how much the interviewer does. If he engages in some behavior, however, his reporting is better if the interviewer also does a lot. The data are interpreted as suggesting that the respondent must have at least a minimum amount of receptivity to the task if the interviewer's effort is to be effective.

4. One of the most surprising and striking findings is that the time of day that the NHS interview occurs has marked and predictable effects on the quality of reporting. Interviews which occur during the meal hours (noon to 1:00 and 6:00 to 7:00 p.m.) are particularly likely to result in poor reporting.

5. Respondents who report well tend to say that the interviewer wanted exact answers, not just general ideas. They are also likely to mention some criticism of the questionnaire or the questions, which may indicate a constructive concern about the accuracy of the information reported. There are no other direct relationships between specific attitudes and reporting, nor between the overall impressions reported by the respondent and his NHS reporting. For older respondents and those interviewed at an inconvenient time, however, an interest in talking with the interviewer tends to be associated with poor reporting.

6. The hypothesis that having information about the purpose of the study will improve reporting was not supported. There was no difference between those with the most and those with the least information in their scores on the Reporting Index. The overall low level of information demonstrated by all respondents was cited as a possible factor in this lack of relationship.

7. There were several relationships between the attitudes expressed by interviewers and the reporting of their respondents. The more successful interviewers tended to mention more concern with the accuracy of data collected and to indicate a more positive and constructive approach to their job; for example, by volunteering suggestions for improving NHS procedures. Neither a concern about

efficiency nor the degree to which they felt friendly interaction should be part of the NHS interview had any effect on reporting, however.

A central question is whether the interviewer or the respondent is most responsible for the quality of the interview. The answer, from both attitudinal and behavioral measures, appears to be that neither is solely responsible; that each contributes to making the interview a success. Interviews are best when both interviewer and respondent engage in a high level of task related behavior; they are best when neither appears to be rushed or hurried. There are interviewer and respondent attitudes and perceptions which relate to the quality of respondent reporting. These facts make the study of the interaction and properties of the relationship between the two participants appear particularly fruitful. Most important, they support what could before only be conjectured: that the answer to improved reporting lies not in changing either respondent or interviewer alone, but in working with them together.

APPENDIX

The forms and questionnaires discussed in this report can be found in the Appendices of the reports which deal specifically with those forms.

During this report, several indices were used and discussed. The construction of these indices is described here in somewhat greater detail.

Rationale for Indices

In using indices, some of the precision of the measures, particularly the behavioral measures in which the incidence of a behavior was counted, was lost. However, the purpose of the study was to identify strong relationships to reporting; and experience has shown that combinations of measures will usually show all of the notable relationships which can be found with more refined measures.

A more important reason for using indices was to make the data more manageable. There were a number of behavioral measures, for example, which were expected to reflect respondent effort to do his job well. Analysis of each of these measures separately would have made the task very long and very much more expensive. The same is true for the ratings. Further, there is an important theoretical rationale for combining measures. Some respondents may show their concern about doing the task well by asking for clarification; others may elaborate their answers. A respondent who does both of these things should be given more credit than the respondent who only does one. The indices reflect both how often a respondent engages in a given constructive act and the number of kinds of constructive acts that he engages in. For this reason the indices may

have somewhat more power than single measures.

The attitudinal indices were constructed for the same reason: to give the measures more power. A respondent would not be expected to mention his interest in being a good citizen in every relevant question; but if he felt that way, he will probably mention it once or twice. Thus, taking the responses he gave to the interview as a whole gives fuller picture of his orientation to the NHS than does the item by item analysis of each answer.

Item selection

The items to be included in the attitudinal indices were selected on the basis of the purpose for which the question was designed. This was essentially true for the behavioral and rating indices, too. However, because the observation form was being used for the first time, the measures which were thought to reflect the same thing, on a priori grounds, were related to one another. In a few cases, it appeared that a measure was reflecting something other than what it was intended to reflect and it was not included in the index.

Behavioral Indices

The specific measures included in the indices of Task Behavior, Unrelated Conversation, and Total Amount of Behavior had varying ranges. Some occurred from 0-98 times while others only occurred from 0-8 times during the selected sections of the interview. Consequently, the measures were collapsed into three, approximately equal groups, to make them more comparable. Those respondents who were in the top third on a measure were given a score of 3; those in the middle were assigned a 2; and those in the bottom third were

assigned a 1. In the few cases in which a behavior was extremely rare, only two groups were formed and two scores assigned: 1 and 2. Thus the measures which did not discriminate well were weighted slightly less in the indices.

When each respondent had been assigned a score on each of the measures to be included in an index, the scores were summed. Then, the distribution of scores was divided into four approximately equal groups. These groups appear in the report as "very high", "somewhat high", "somewhat low", and "very low".

Rating Indices

The rating indices were constructed in much the same way as the behavioral indices. Almost all of the ratings were five-point scales. Ratings which were interrelated and which on a priori grounds were thought to measure a single concept were summed: the lowest category being assigned a 1, the highest a 5. The distributions of these sums were then examined and divided into four approximately equal groups.

Attitude Indices

The attitude indices for respondents--and for some of the measures for interviewers--were constructed very simply. Respondents had five or six opportunities to mention a given concern or a given interest. For example, there were four open questions in which a respondent could mention some concern about how much time the interview took or the inconvenience of the interview. In addition, there were two specific questions which asked the respondent directly how he felt about giving up his time and whether or not the interview occurred at a convenient time. The index of concern about time was

the number of times the respondent took these opportunities to mention such a concern. The other indices were constructed in exactly the same way.

Interviewer goals

Interviewers were asked to describe their ideal respondents and their worst respondents; they were asked which of several types of respondents they preferred to interview (e.g. high or low income, talkative or quiet); they were asked whether they thought respondents should have information about the study, whether they thought it desirable to "visit" with respondents, and whether the letter and brochure were useful. After each answer, they were asked to explain the reasons for their answer. These explanations were coded into three categories. A given explanation could be coded into more than one category or into none of them.

1. Accuracy. Interviewer prefers a given type of respondent or procedure because of increased accuracy of information obtained, or does not like a respondent or procedure because of decreased accuracy.

2. Speed or efficiency. Interviewer likes a given type of respondent or way of handling the interview because of increased speed of finishing the interview or efficiency, or does not prefer it because it is slow or less efficient.

3. Pleasantness. Interviewer finds personal interaction more pleasant with preferred respondent or procedure, or finds it more tense and unpleasant with the respondent or procedure which is not preferred.

In each case, in order to be "scored", the interviewer had to be very specific; ambiguous answers were not coded. The interviews were coded independently by two coders, with disagreements resolved by one of the principal investigators.

$$\begin{array}{r} 1404 \\ \times \quad 5.6 \\ \hline \end{array}$$