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Collecting Demographic Data in Bangladesh: Evidence from Tape-Recorded Interviews

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Preface

A critical assessment of survey experience and data quality is an integral part of the WFS programme. This assessment aims at ensuring that the analysis is carried out with as full an understanding as possible of the quality and reliability of the data and at drawing lessons for the better conduct of future surveys.

The Bangladesh tape-recording study, carried out in the context of this assessment, is unique within the WFS programme. In view of the need to carry out the individual interviews in private, there is very little direct information which provides us with insight into the actual process of interviewing. The tape-recording of interviews is perhaps the only source of such information. The staff of the Bangladesh Fertility Survey are to be congratulated on their valuable and very time-consuming work in systematically transcribing and translating a vast amount of tape-recorded material, covering well over 300 hours of interview. Of course, this study would not have been possible without the co-operation of the women who were kind enough to permit their interviews to be recorded.

The result of this exercise is the present report which provides an illuminating commentary on various aspects of the field experience of the Bangladesh survey. The points made are of course based on the experience of one survey within the Bangladesh setting but we hope that the lesson drawn will have wider relevance and a more general application. By the same token, the candid observations of the authors are not in any way intended to reflect on the management of the Bangladesh Fertility Survey. Many of the conclusions no doubt apply to other surveys, but they are very rarely documented and we are indeed grateful to the authors for this contribution.

Finally, on behalf of WFS and survey researchers, I wish to express our gratitude to the Director-General and the staff of the National Institute of Population and Training (NIPORT) for their valuable association and continued co-operation which made this project a reality.

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This study was carried out under the auspices of the National Institute for Population Research and Training (NIPORT), Dacca, Bangladesh. The study benefits greatly from earlier analysis of the BFS tape-recorded interviews by Raana Ahmad. The authors are grateful for comments on an earlier version of the report provided by John Cleland, Robert Hanenberg, Ron Lesthaeghe, Hilary Page and Chris Scott. We are especially indebted to the Bangladeshi interviewers and respondents whose conversations are reproduced in this report.

1 Introduction

1.1 BACKGROUND

Most current information on fertility is gathered through structured interviews with samples of women. This is especially true in less developed nations, where alternative sources of data (censuses, registration systems) are either non-existent or severely defective. Within the World Fertility Survey (WFS) programme, interviews have been conducted with probability samples of 3000 to 10 000 women of reproductive age in 42 developing countries, amounting to roughly one-quarter of a million interviews in total. The interviews, which average one hour in length, are conducted by trained interviewers who administer a questionnaire comprising almost entirely closed-ended items. In these features, the WFS surveys are not unusual; indeed, surveys of this type provide most of the data used in fertility research on contemporary populations.

The validity of the data gathered in such surveys is a function of the success of the individual interviews. The success of each interview depends, in turn, on many factors, influenced both by the researcher and the respondent. The factors under the influence of the researcher include the design of the questionnaire, the extent to which the interviewer correctly administers the questionnaire, and the resourcefulness of the interviewer in adapting to the exceptional circumstances which any particular interview may present. Factors which depend on the respondent include the respondent's willingness to participate in what is often an unfamiliar experience, and her comprehension of the questions asked as well as her ability to supply accurate responses. Attention is given to each of these factors before, during and after the fielding of a survey. In the WFS programme, questionnaires are carefully designed and pretested, interviewers are given training lasting several weeks, field supervisors are instructed to monitor interviewers' performance and the incidence of refusals, and once the data have been collected and processed, their quality is evaluated through demographic analysis. But in all these efforts to ensure a successful survey and later to evaluate its success, the interview itself remains hidden from view. The interchange between the interviewer and the respondent is the keystone of the whole enterprise, yet evidence about this interchange, although extensive (the completed questionnaire represents, in principle, almost a complete record), is entirely indirect.

Tape-recordings of the interviews offer a more direct view into the interviewing itself. A small number of interviews have been tape-recorded in all surveys within the WFS programme. The tape-recordings enable a fuller re-creation of the interview than can be achieved by other practical means. The re-creation is far from complete; much remains hidden from the tape-recorder. Nevertheless, with tape-recordings an opportunity is presented to consider in unusual detail and depth many aspects of interviewing.

1.2 OBJECTIVES

This report contains the findings from analysis of the transcripts of 220 interviews tape-recorded during the Bangladesh Fertility Survey (BFS), which was fielded in 1975 and 1976 as part of the World Fertility Survey programme. Our analysis of these tape-recorded interviews has three major objectives: (1) enhanced understanding of the substantive findings of the survey; (2) a description of interview dynamics, with the aim of developing suggestions for improving the methodology of such surveys in Bangladesh and elsewhere; (3) an illustration of the use of tape-recordings in the evaluation of survey experience.

The report is organized as follows. In the next section the background and development of the project are reviewed. In the third section the methodology of the study is described. Subsequent sections are organized by topics which correspond to sets of items in the Bangladesh Fertility Survey questionnaire. The dating of events is examined in some detail in two separate sections. We first present analysis of the dating of the respondent's birth and her first marriage and follow that with extensive analysis of the dating of pregnancies in the pregnancy history section of the questionnaire. We then examine the questioning about contraceptive knowledge and use and about fertility preferences, in sections six and seven, respectively. We conclude the report with a summary discussion of the implications of our findings for the design and conduct of fertility surveys.

2 Background

2.1 THE USE OF TAPE-RECORDINGS IN THE WFS PROGRAMME AND OTHER DEMOGRAPHIC SURVEYS

The WFS programme has made more use of tape-recordings than any other programme of surveys in developing countries. Tape-recordings of partial or entire interviews are obtained in three different phases of the preparation and actual fielding of WFS surveys. During the training of interviewers, practice interviews are recorded and then played back, enabling direct and vivid pinpointing of interviewers' errors (WFS 1975a). Interviews are also recorded during the survey pre-test, as an aid in the efforts to improve interviewers' performance. Equally important, the tape-recordings are helpful in detecting problems in design and layout of the proposed questionnaire, in particular any lack of clarity in wording. Of special concern are the items devised for individual surveys (country-specific items) and the success of the translation of the WFS core questionnaire into local languages. In many surveys, tape-recordings of the pre-test interviews served to bring home to the survey staff the over-sophisticated character of the wording in the initial translation from English or French.

During the fieldwork of the survey proper, the tape-recordings serve principally as a means of monitoring interviewers' performance (WFS 1975b, 1975c). Typically in WFS surveys, some or all of the field supervisors are male. Because of the nature of the matters inquired about, with few exceptions the interviewers are female, and it is awkward for the supervisor to observe the interviews. Consequently, the tape-recordings are an essential tool for the supervisor in the maintenance of quality control. Each interviewer is required to tape at least one interview, but in most surveys interviewers record many more. Recordings are obtained during the early stages of the fieldwork, so that supervisors can confirm that the interviewing is proceeding acceptably; later on, recordings are obtained during the final stages, to counteract a suspected inclination for interviewer performance to slip as the survey nears completion.

The tape-recordings from the main survey, if not discarded or taped over, can also be used in the post-fieldwork evaluation of many aspects of the field experience. The study reported here represents the first systematic analysis of tape-recordings from a WFS survey,[1] but recordings from other demographic surveys or censuses have been studied. Pool and Pool (1971) give an analysis of 25 taped interviews from a fertility survey conducted in rural and urban Niger. The authors utilize the tape-recordings to amplify the meaning of the questionnaire responses and to identify questions which presented particular difficulties for respondents. Taped interviews from the 1971 Moroccan census have been analysed by two researchers. Quandt (1973) examines transcripts of 82 tape-recorded interviews (some of her analysis is restricted to 68 interviews) for insight on how information is collected on three topics: the composition of the household, and the age and employment activity of individuals. She views the interview as a social exchange in which the interviewer and respondent jointly produce responses satisfying the census requirements, which often presuppose concepts alien to the Moroccan respondents. Davis (1973) selects 100 taped interviews and focuses specifically on the recall of the occurrence and dates of births and migrations. In another study in western Africa, Gibril (1979) analyses 99 tape-recorded interviews from the 1973 census of Gambia. Like Quandt, Gibril is concerned with the way in which census concepts (such as 'household') are imparted and understood during the interview. He considers the extent to which interviewers err in the asking of questions and the recording of responses ('procedural' errors) and searches for evidence that respondents misunderstood or misinterpreted questions ('conceptual' errors), and he concludes that both types of error contribute significantly to overall response error. Adeokun's (1981) study differs from the others in the nature of the interview material analysed. Interviews were tape-recorded with 24 families in two areas in Yorubaland in Nigeria. Transcribed material from eight interviews is presented in the report. The interviews consisted of lengthy semi-structured discussion of child-spacing strategies. Adeokun argues that the important content of these interviews can only be revealed through the recordings and their transcripts.

The five studies cited vary in emphasis, but each makes use of the tape-recordings for insight into how respondents interpreted questionnaire items and into the meaning of the responses. All five studies draw on data from western Africa. The present study is, to our knowledge, the first of any magnitude conducted in south Asia. Indeed, in the amount of interview material examined, it far exceeds previous studies from any region of the developing world. Within the overall objective of assessing the sources and dimensions of response error, this study shares with previous ones a dual emphasis on evaluation of the performance of interviewers and interpretation of the information collected.

2.2 DEVELOPMENT OF THE BFS TAPE-RECORDED INTERVIEWS PROJECT

The fieldwork for the BFS was undertaken from December 1975 to March 1976. A total of ten teams were in the field, each consisting of five female interviewers, a male supervisor, a female supervisor and a cook. Each interviewing team was issued with a tape-recorder and cassette tapes,

[1] Excerpts from tape-recorded interviews have occasionally been used for illustration. See, for example, Ramirez *et al* 1976, which draws heavily on tape-recordings from the Dominican Republic Fertility Survey.

with instructions to tape a minimum of one interview per interviewer in each sampling unit and to circulate the recorder among the team members. Interviews were recorded in 329 households containing 317 eligible respondents. There had been hopes of recording a somewhat larger number, but mechanical problems with the tape-recorders (including the short life of available batteries) and the loss of one of the tape-recorders midway through the field period caused shortfall. Refusals to allow tape-recording of the interview accounted for a small proportion of the shortfall.

We stress that no efforts were made to ensure that all interviews had an equal probability of being selected for tape-recording. The requirement that all interviewers tape-record a minimal number of interviews ensured that these interviews were dispersed across the sampling units of the BFS. For example, each of the 18 administrative districts of Bangladesh is represented, with only two exceptions, by ten or more interviews out of the total of 329 (see Ministry of Health and Population Control 1978: appendix F, table 1). In the next section of this report we compare the tape-recorded respondents with the full BFS sample and conclude that the recorded respondents as a group resemble the full sample on most measured characteristics.

When the first substantive findings of the survey became available, the senior staff of the BFS suggested a post-fieldwork examination of the tape-recorded interviews. The proposal for further examination of the recordings was a response to several puzzling features of the BFS findings.

1 A calendar date was not recorded for most of the events inquired about in the BFS. 98 per cent of the respondents' ages, 67 per cent of the ages at first marriage and 85 per cent of the dates of children's birth.
2 The BFS data show a sharp decline in fertility over the five-year period preceding the survey and rather low absolute levels of fertility in the year or two preceding the survey.
3 The data show moderate declines in infant mortality in the five-year period preceding the survey.
4 Although the knowledge of contraception was high, levels of ever-use and current-use were very low.
5 A surprising proportion (13 per cent) of the respondents with no living children reported wanting no more children (hence wanting no children at all).
6 A large proportion of women (roughly 30 per cent) supplied non-numeric responses to the 'ideal' family size question.

These features of the data raised questions about the accuracy of the information on current age and age at marriage, as well as encouraging suspicion that the data on the occurrence and timing of births and infant deaths were not reliable. Concern was also felt about the meaning and validity of the contraceptive use and fertility preference data. It was hoped that the recorded interviews might contain information which would clarify these findings.

An examination of the tape-recordings was undertaken in January and February 1977 in Dacca under the direction of Raana Ahmad. The findings of this analysis, which complements the study presented in this report, are described in appendix F of the Bangladesh First Country Report and in Ahmad (1979). Ahmad engaged six former BFS interviewers to listen to the 329 tapes while simultaneously following the completed questionnaire. The interviewers were instructed to be alert to instances of leading questions, wrong question sequences, misrecorded responses and insufficient or directive probing. When such errors were noted, they were recorded on an 'Error Reporting Schedule', and Ahmad's papers summarize the evidence contained in the schedules. A few of the findings may be highlighted here. She reports evidence of considerable difficulty, on the part of both interviewers and respondents, with the household listing (in the household survey) and with the pregnancy history section. Interviewers occasionally reacted by omitting, rewording or re-ordering questions. She notes that in some interviews lengthy conversation occurred about attitudinal items, specifically fertility preferences and the approval of abortion. Finally, she reports an apparent under-reporting of the number of persons present during the interview. This latter bit of evidence from the recordings, she observes, could not be obtained readily by other means; for example, it is not represented in transcripts of the recordings. Ahmad's reports contain many other more specific observations to which we return throughout this paper.

On the basis of her experience with the tape-recordings, Ahmad argued that transcription would allow more detailed analysis to be carried out:

> it would be a mistake to view the operation as a thorough evaluation of the taped interviews. The results depend crucially on the extent to which the evaluation staff were successful in giving meticulous and unflagging attention to the tapes as they ran. Only those who have tried for themselves will appreciate the tedium of listening to scores of recorded interviews. In the present case, the average evaluator had to deal with approximately 60. On any reasonable assessment, the results must represent an underestimate of the true number of errors and problems which could be found by sufficiently intensive search of the tapes . . . . A full transcription of the recordings would allow a more complete analysis . . . (Ahmad 1979).

Ahmad's argument echoes those of other analysts who have concluded that tapes are too cumbersome to employ efficiently in detailed post-fieldwork analysis and that the benefits of transcription outweigh the large investment of resources required (Krotki 1974).

Transcription of the tape-recordings and their subsequent analysis was established as a collaborative project between the WFS and the BFS (now part of the National Institute of Population Research and Training). Transcription and translation into English were done in Dacca. The transcription and translation of 220 of the recordings began in November 1979; transcription was completed in January 1980, and the translation several months later. Eight women, four of whom had interviewed in the BFS, transcribed and translated. (Each of the four who had not interviewed in the BFS had an MA degree in the social sciences.) Transcription of each recording required six to seven hours on average, which is consistent with the six-hour average reported by Ahmad for transcription of 24 of the recordings (Ministry of Health and Population Control 1978: appendix F).[2] Translation into English required an addi-

[2] The interviews averaged about one hour in length. Transcription at the rate of six hours for each hour of tape-recording is essentially the same rate reported by Bucher *et al* 1956a (six and a third hours for each hour of tape) and is markedly lower than the figure of 36 hours for each hour of tape-recording reported by Krotki (1974) for Moroccan census interviews.

tional two to three hours for each transcript. In a final stage, the handwritten English translations were typed out, and it is these typewritten transcripts which we analyse. These average roughly eight and a half pages in length, totalling almost 2000 pages of material. (Appendix C contains an extended excerpt from one of the English transcripts, to provide the reader with a glimpse of the raw data of this study.) It is quite evident that transcription and translation demand an enormous investment of time and energy. This must be weighed against the considerably greater convenience and flexibility for analysis afforded by transcripts as compared to tape-recordings.

3 Methodology of the Present Study

3.1 APPROACHES TO THE TRANSCRIPT MATERIAL

Analysis of the English transcripts commenced in Dacca in June 1980 with a thorough reading of the entire body of transcripts and the coding of details from every transcript.

The transcripts provide evidence on many features of the interviewer-respondent interchange. Several aspects of the interviewer's performance are clear: whether the appropriate questions were asked; whether questions were worded correctly; whether probing was sufficient and non-directive, and which probes were employed; and whether responses were recorded accurately. Several aspects of the respondent's behaviour during the interview are also revealed: responses which were not recorded, most often because they did not fit within questionnaire requirements; comments which indicate miscomprehension of questions or embarrassment; comments which suggest the intended meaning of the recorded responses (eg answers to fertility preference questions). Note that the evidence about the interviewer's performance is more complete than the evidence about the respondent's experience of the interview; for example, the transcripts probably reveal only a fraction of the miscomprehension and embarrassment of the respondents, and there is no evidence on the intended meaning of the majority of responses.

It has not been feasible to make full use of each of these types of evidence. In particular, because we analyse the English transcripts, only in section 7 (Fertility Preferences) do we address the issues of correct question wording and directive probing. In the bulk of this report we assess interviewer performance only on the basis of the following material coded from the transcripts:

1 whether required questions were asked;
2 whether probes were used at all, and how many in each instance (in practice, the number of interviewer 'statements', as marked off by respondent statements);
3 the methods used by interviewers to obtain the appropriate information, in particular the methods used to calculate dates of events and ages.

Taking advantage of the completeness of the interchange provided by the transcript, we coded the following from the respondent's replies and comments:

1 the month or year of an event when one but not both were reported;
2 evidence of the methods by which events were dated or ages calculated by the respondent;
3 for some items, 'appropriate' responses, that is, responses which fit questionnaire requirements.

On the basis of (3), an assessment can be made of the magnitude of recording errors by the interviewer. But because discrepancies between the transcripts and the final BFS data-file cannot be attributed to recording errors alone, (see section 3.2), we have avoided pursuing this matter in our analysis and report no findings here.

To analyse problems of miscomprehension and embarrassment, and to obtain insight on the intended meaning of responses, we rely on our thorough reading of the transcripts, and we quote extensively from the transcripts. Indeed, although the data coded from the transcripts enable more systematic investigation of their contents, on many topics the coded data have played a secondary role in the analysis. The great value of the transcripts is the vivid picture they provide of the dynamics of the interview, including subtleties of social interaction not easily observed by any other means.

The coding and reading of the transcripts focused on those sections of the BFS questionnaire which yielded the problematic data: the items on the dates of birth and of first marriage of the respondent; the pregnancy history, where the dates of the termination of the respondent's pregnancies were collected; the section on contraceptive knowledge and use; and the fertility preference items.

3.2 PROBLEMS IN ANALYSING THE TRANSCRIPTS

It is hoped that future projects of this nature can benefit from this one. Here we briefly review some of the problems encountered in analysis of tape-recordings. While other analysts have made passing reference to 'linguistic problems' (Gibril 1979; Pool and Pool 1971) and 'technical problems' (Quandt 1973), these are never specified. Helpful guidance is provided, however, by several explicitly methodological pieces (Bucher *et al* 1956b; Krotki 1974). The discussion here is not intended as direct criticism of any individuals involved in this project at any stage, but rather as illustration of the types of problems which often arise.

The transcripts we analyse are the result of a process with three distinct phases: interviews were tape-recorded, transcribed and translated. At each stage, there is a risk that human (and, in the first two stages, mechanical) errors will impair the validity of the final record. As a consequence, the transcripts analysed are further removed from the actual interview experience than would be desirable. Krotki (1974) refers to such transcripts as 'transformed' data, just as the coded information on a data-tape is a transformation of what the respondent actually said into machine-readable data. Certain procedures minimize the amount of transformation.

Tape-Recording Problems

The most obvious problems concern hardware: usable tapes and tape-recorders must be available. In the BFS the poor quality and short life of the batteries was a hindrance, resulting in some tape-recordings of poor audio quality and

a smaller number of recordings than intended. Some recordings terminate in the midst of interviews, either because batteries went dead or the end of a tape was reached. Water damage to the recorders and tapes also caused a loss of usable tape-recordings. The setting of fieldwork in Bangladesh made elimination of water damage extremely difficult.

Obtaining a useful tape-recording presented additional problems. Responses must be audible to be recorded on the tape; nodding of the head or shrugging of the shoulders, which normally might be quite acceptable, do not register. Although the transcripts show that on some occasions interviewers took great pains to ensure that all responses were audible, usually interviewers failed to do so, either forgetting about the recorder or deciding that insistence on audible responses would damage the interview. As a consequence, sections of some transcripts show no replies to the interviewer's questions. This obviously diminishes the usefulness of the transcripts, but at the same time maintains their representativeness of the usual interview experience. On the face of it, the BFS transcripts suggest that the tape-recorder had a minimal effect on the interview, a conclusion in harmony with the findings of many other studies (see Belson 1967; Bucher *et al* 1956b; Cannell *et al* 1975; Kantner and Zelnik 1969; Krotki 1973; Pool and Pool 1971).

Transcription Problems

The outstanding feature of the transcription stage is the immense amount of time required, as noted above (section 2.2). Before embarking on a project of this type, serious consideration must be given to whether the required amount of labour is available and whether the project merits such a large amount of effort. Most analysts conclude, with Krotki (1974), that the potential returns justify the investment.

The task of transcribing is tedious and complicated by the lack of clarity of the recordings. The latter problem is sometimes explicitly noted by the BFS transcribers, for example by a gap in the transcription and a comment such as 'disturbed by other sounds'. The transcribers sometimes also note difficulties in distinguishing the speaker when more than one person was present and participating in the interview. This was more commonly a problem in the household survey interview, since there information was solicited from anyone able to supply it. Because it seldom occurs in the individual survey interview, the confusion has a minimal effect on the analysis of the transcripts, but it is a characteristic of the tape-recordings which makes their transcription tedious and time-consuming.

The transcripts also suggest that in some instances it was difficult to distinguish in the recordings between 'yes' and 'no' responses. We can imagine that in the interview a nod of the head or a gesture reinforced the barely audible 'yes' or 'no', so that the response was unambiguous. In the recordings, the transcriber is left only with the weakly audible response to interpret.

Translation Problems

An important issue here is whether it is preferable to translate from transcripts or directly from the tape-recordings.[3] Subtleties of meaning and tone are lost in transcription which possibly should be taken into account when translating. In our experience, however, transcriptions of high quality permit more complete translation than the original tape-recordings. When working directly from tape-recordings, translators are tempted to paraphrase. The translation of the BFS transcripts is very literal, showing little evidence of intentional paraphrasing or summarizing.

We have checked the translations of several transcripts and have found them to be of very high quality. At the same time, it is our view that the Bangladeshi tape-recordings and transcripts provide opportunities for analysis of potentially more depth and sensitivity than permitted by the English transcripts and we strongly urge that every effort should be made to work in the language of the interview in studies of this type.

3.3 CHARACTERISTICS OF THE TRANSCRIPT RESPONDENTS

The interviews for which we possess transcripts are by no means a random sample of the full set of BFS interviews. The transcripts in hand correspond to roughly two thirds of the total number of taped interviews (218 individual survey transcripts out of 317 total). There is no way to reconstruct the selection process which yielded 218 transcript interviews from the total of 6513 individual survey interviews and to assess the full extent of possible biases introduced. It is possible, however, to compare the transcript women with the full BFS sample on those variables measured as part of the interview.

In this section we compare the transcript respondents with the full set of BFS respondents on a small number of selected variables. We also offer some brief speculations as to the reasons for some of the discrepancies observed. The comparison is limited to those transcript respondents who have been matched with a respondent in the full BFS data file, 190 transcript respondents in total. (See appendix A for a discussion of this matching process.) The tables referred to in this section are shown in appendix B.

Geographic Location

In table B1 we compare the place of residence distributions of the full BFS sample and the transcript subsample. It is evident that a somewhat larger proportion of the transcript women reside in urban areas. We offer two explanations for this. First, urban women were more likely to possess other characteristics (schooling, for example) which increased the likelihood of their being tape-recorded. Similarly, we suspect that these characteristics also explain the greater likelihood of the transcript women being weighed and measured for height (see table B4). Secondly, urban households in general were more convenient to reach. During the course of the fieldwork both tape-recorders and tapes suffered damage, often from water. The frequent travel over water in rural areas, and the greater exposure to the elements, may have caused more loss of potential and actual tape-recordings of interviews than in urban areas.[4] The figures in

[3] Pool and Pool (1971) work directly from the recordings, as does Davis (1973); in the other studies cited, transcription precedes translation.

[4] We surmised that the urban concentration of the transcript women accounted for other differences between the two samples, and therefore we made other comparisons separately for urban and rural women, as well as for all women. The separate analyses by type of place of residence produced essentially the same results.

table B1 also show that the transcript women were not more heavily concentrated in particular regions of the country.

Demographic Characteristics

In table B2 distributions of six demographic variables are presented for both samples. From panel A we observe that the transcript sample is more concentrated in the ages 25–39 (ages 25–29 in particular) and lacks women at ages 40 and over. Consistent with this difference in age distribution, the transcript women are more likely to be currently married and less likely to be widowed or divorced. The transcript sample also contains a lower percentage of women reporting eight or more children, while at the same time containing fewer zero parity women.

Apart from the relative lack of zero parity women, the fertility and fertility-related characteristics of the transcript women are, in general, 'low-fertility' characteristics relative to the full BFS sample. The figures in table B2, panel B indicate that the transcript women are slightly more likely not to want their last pregnancy, more likely to specify a smaller ideal family size, and more likely to have used a contraceptive method. The ideal family size comparison is complicated by the fact that a considerably smaller proportion of the transcript women supply a non-numeric response or no response at all. Among those women who provide a numeric response, there is little difference between the BFS sample and the transcript subsample.

Socio-Economic Characteristics

Table B3 indicates that there are some differences in socio-economic characteristics between the two samples of women. Part of this can be attributed to the fact that the transcript women are less likely to be aged 40 and over. A higher percentage of the transcript women report some years of schooling, and a higher percentage of their husbands are engaged in non-agricultural economic activity. Among the husbands who work in agriculture, furthermore, the transcript husbands are slightly more likely to be landowners. A larger proportion of the transcript subsample is Hindu, a smaller proportion Muslim.

Interview Characteristics

A principal aim of the transcript analysis is to examine interview dynamics. For this reason, it is of special importance to assess whether the transcript interviews are selective of certain interviewers, of respondents who behaved differently during the interviews, or of interviews with distinctive characteristics.

With respect to possible selectivity of the interviewers, there is only one piece of information on which to base an assessment, namely the identification of the interviewer for each interview. Some 75 persons in total interviewed during the BFS, 59 of whom contribute interviews to the 190 transcripts matched with respondents in the BFS Standard Recode File. We have compared the interviewer distribution for the BFS with that for the transcript sample; the transcript interviews did not come disproportionately from any particular interviewers.

In table B4 we examine three characteristics of the respondent or the interview, as judged by the interviewer. The ratings of the reliability of the birth history are distributed almost identically in the two samples. Similarly, essentially the same proportion of the transcript women as the full sample are reported as being 'unco-operative' and 'co-operative', although slightly more of the transcript women are judged to be 'very co-operative'. With respect to the presence of others during the interview, the figures in the right-hand columns of table B4 indicate that the two samples do not differ substantially.

Finally, we note that the transcript interviews are, on average, of greater duration than the total set of BFS interviews: the mean lengths of the transcript and BFS interviews were 65 minutes and 55 minutes, respectively. Some of this difference in mean length is accounted for by fewer short interviews among the transcript sample. Krotki (1974) hypothesizes that tape-recorded interviews will generally be longer, because interviewers will be more thorough. We have no direct evidence that interviewers were more painstaking when tape-recorded. The recorded interviews yielded fewer non-numeric and 'don't know' responses to the ideal family size question, and this may indicate greater care on the part of the interviewer. On the other hand, the percentage of pregnancies without a calendar date of termination is 88 among the transcript women, essentially the same as the corresponding figure of 85 per cent for the live births of the entire BFS sample. The latter comparison indicates no special effort to obtain more complete dating of pregnancies when the interviews were tape-recorded.

3.4 SUMMARY

We have gone into detail about the development and methodology of this project because it is unique and does not rely on well-accepted procedures. The BFS tape-recordings have been analysed in two stages: direct listening to the recordings, conducted by Ahmad; and examination of transcripts, described in this report. We advocate both approaches. In particular, we contend that transcription greatly increases the potential value, for analysis, of tape-recordings. It is our impression that most of the 'transformation' of the transcripts away from accurate records of the tape-recordings occurred at the translation phase. To minimize the opportunities for errors, we recommend avoiding extra phases. For this reason, and because of the loss of meaning inherent in translation, we urge that analysis be performed in the language of the interview, whenever practicable.

Comparison of the transcript respondents with the full BFS sample on available characteristics provides no indication that the transcript respondents are a seriously biased representation of the full sample. Indeed, the evidence suggests that the transcript women resemble the full sample remarkably closely, considering the lack of proper sampling, on characteristics of most relevance to our analysis.

4 Obtaining the Respondent's Current Age and Age at Marriage

The age of the respondent at the time of the interview is one of the most important items of information collected in a WFS survey. Rarely does the respondent's age not enter into data analysis, regardless of the primary topic under consideration. To a lesser extent, the same holds for respondent's age at first marriage: used either directly, or in conjunction with the respondent's age to determine the duration of marriage, it enters importantly into most analysis. A major objective of the BFS, in common with all WFS surveys, is to provide estimates of trends in fertility, and trends in nuptiality as well. (See the analysis of fertility trends in Brass and Rashad 1980, and Committee on Population and Demography 1981; analysis of nuptiality trends is contained in Hossain and Ali 1980.) The most commonly used fertility and nuptiality measures are constructed from age-specific data. Hence, accurate estimates of trends in either variable requires trustworthy data on current age and age at first marriage. (For the effects of age misreporting on one type of fertility estimates, see van de Walle 1968.)

In Bangladesh and many other Asian and African societies where dates of births are not marked with yearly celebrations and do not figure significantly in people's lives, collection of dates of birth and marriage can be very difficult. (For a review of this topic, see Ewbank 1981.) Demographic analysis of data from south Asia indicates that misreporting of current age or date of birth is common (for India, see Raghavachari and Natarajan 1974; for Pakistan, see Retherford and Mirza 1981), with Bangladesh no exception to this rule (see, for example, Roy and das Gupta 1976; Blacker 1977). While the BFS data suggest less misreporting than typical in recent censuses or surveys (Committee on Population and Demography 1981), there is evidence of substantial error: the single-year age distributions for males and females is heaped on ages ending in the digits 0, 5 and (to a lesser extent) 2 (Ministry of Health and Population Control 1978: table I.1); in the Post-Enumeration Survey conducted after the main BFS, the current age reported for 61 per cent of the respondents differed by more than one year from the age provided in the main survey, and 68 per cent are shown with an age at current marriage differing by more than one year (Ministry of Health and Population Control 1978: section 9.4).

With this in mind, we examine the transcripts for evidence on how dates of birth and first marriage (or current age and age at first marriage) were obtained. Since most transcripts include both the household survey and individual survey interviews, we examine the date of birth (current age) interchanges in both. We consider two separate but related topics: the interviewer's performance (section 4.1), and the respondent's behaviour during the interview (section 4.2). The first set we term 'procedural issues', the second set 'conceptual issues', after Gibril (1979).

4.1 PROCEDURAL ISSUES: INTERVIEWER PERFORMANCE

We consider here two topics: the type of questioning first used by the interviewer; and the type of probing used when the respondent did not spontaneously provide suitable responses to the initial question.

Questioning

Interviewers were instructed to ask for the calendar month and year of the respondent's birth (in both the household and individual surveys) and of her first marriage (in the individual survey). If both the month and year were not known, current age was to be obtained as a substitute for the date of birth and age at marriage as a substitute for the date of marriage.[5] If calendar year alone was known, that was sufficient, although occasionally interviewers made an effort to obtain both calendar year and age. In the discussion which follows, we refer to 'month', 'year', and 'age' as the information to be obtained.

An important fact revealed by the transcripts is that frequently interviewers did not initially ask for the date of birth or first marriage but instead immediately asked for current age or age at first marriage. The percentage of cases in which the pertinent questions were not asked is shown in table 1.

A striking feature of this table is the large differences among the three sets of events (current age in two interviews, and age at first marriage) in the incidence of omission of questions (first row of the table). The questions on month and year were far more likely to have been asked about the respondent's birth in the individual interview than in the household interview, and most likely to have been asked about her first marriage. On the other hand, in those cases where the date of the event was not known and thus the age question was to have been asked, interviewers more frequently asked about current age in the household survey than about current age or age at first marriage in the individual survey.

The percentages in table 2 indicate that the month and year questions, but not the age questions, were less likely to be asked if the respondent was older (age recorded as 30 years or more) and less educated. The greater incidence of question omission when interviewing older women is especially marked for the individual survey items (dates of birth and first marriage). (Compare the first rows of panels A and B.) The transcripts indicate that many older women had no knowledge of the dates of these events, a fact often learned by the interviewer in the household interview.

[5] For the first marriage, the interviewer was asked to calculate the calendar year from the age at first marriage and record the year rather than age.

Table 1 Percentage of questions not asked and percentage of questions receiving appropriate response: respondent's date of birth in the household survey and in the individual survey, and respondent's age at first marriage

	Event, and date information								
	Date of birth, household survey			Date of birth, individual survey			Date of first marriage		
	Month	Year	Age	Month	Year	Age	Month	Year	Age
Question not asked (%)	59	55	5	19	17	17	8	7	15
Appropriate response									
Of all cases (%)	4	4	78	6	5	72	34	15	71
Of cases where question asked (%)	9	10	82	7	6	87	37	16	84
Total N[a]	202	202	195	214	214	204	214	214	184
N question asked	82	90	185	173	177	169	196	199	156

[a]The two transcripts which contain household survey interviews only are excluded altogether. Sixteen other transcripts are incomplete or unusable for the household survey interview. Four other transcripts are incomplete in the sections of the individual survey interview where date of birth and date of first marriage are asked about. 'Age' is not needed as a method of dating when month and year are provided, hence the smaller values for N for the age columns.

Having learned this, the interviewers were understandably inclined to avoid what was likely to be a fruitless effort in the individual interview. We return to this point below.

It is impossible to determine whether the omission of questions by interviewers resulted in a loss of information, but table 1 provides evidence which suggests that the loss, if any, was very slight. While the overall level of question omission for date of birth was much higher in the household interview, the percentage of appropriate responses supplied (second row) is roughly the same as in the individual interview. The transcripts confirm that calendar dates of birth and of marriage of adults are not well known in Bangladesh. This presented the BFS interviewers with a major challenge. We turn now to the strategies for obtaining suitable information on current age and age at marriage which the interviewers adopted.

Calculation of Current Age and Age at First Marriage

We discuss here the methods of calculating ages as part of our discussion of interviewer performance, although it will become obvious that determining ages was often a collaborative effort between the interviewer and the respondent.[6]

When the respondent could spontaneously provide neither a date (of birth or first marriage), nor an age, an age had to be determined by indirect means. The BFS interviewers were trained to ask the respondent for information on the timing of other events and, on the basis of this additional information, calculate a current age or age at first marriage.

> ... ask the respondent how old she is; if she does not know the answer to this question directly, you may still be able to obtain her age indirectly. You can do this in several ways. You can ask her if she can relate the time of her birth to some important local event. You can try to find out how old she was when she was married and how long she has been married; sum the two numbers and you will have an estimate of her age. Similarly you may be able to relate her age with that of a child of hers whose age you may be able to find out (Bangladesh Fertility Survey 1975: 40).

The chief methods of calculation and their relative frequency of appearance in the transcripts are shown in table 3. (Note that the table is based on those transcripts where there is evidence of age calculation; for current age in the individual survey and for age at first marriage, these represent well below half of the entire set of transcripts.)

Calculation of current age in the household survey interview was based almost always on the respondent's reported age at or date of first marriage, which was used in conjunction with the respondent's reported duration of marriage. The following excerpt illustrates the use of this method.[7]

Transcript Number 071

I **Well, how old is Shahed Ali?** [respondent's husband]
R Shahed Ali is 25.

I **Shahed Ali is not 25, isn't it? But he had told me earlier that he is 35. Say correctly the right one.**
R He was married at 22 years.

I **You are married for how many years?**
R Six/seven years.

I **Then it is 28. It will be 28 or more. 29 or 30, what?**
R Write 30.

[6] In the active role played by the interviewer, the BFS interviews more nearly resemble the interviews from Gambia described by Gibril (1979) than those from Morocco described by Quandt (1973). Quandt reports that the Moroccan interviewers usually relied on the respondent to supply a current age, even when this required estimation by indirect means. In the BFS, as in the 1973 census of Gambia, the interviewers appear to play the leading role in the calculation of ages.

[7] Throughout this report we present the transcript excerpts with only minor improvements in the English grammar and sentence structure, deliberately preserving most of the original translation. These translations sometimes give an unfavourable impression of the interviewer or the respondent. We stress that this is not intentional; indeed, it would be a simple matter to improve the English language of the excerpts, but we choose fidelity to the material as presented to us for analysis.

Table 2 Percentage of questions not asked and percentage of questions receiving appropriate response: respondent's date of birth in the household survey and in the individual survey, and respondent's age at first marriage, by current age and education of respondent[a]

	Event, and date information								
	Date of birth, household survey			Date of birth, individual survey			Date of first marriage		
	Month	Year	Age	Month	Year	Age	Month	Year	Age
A Age less than 30 years									
Question not asked (%)	58	55	5	11	10	17	2	1	14
Appropriate response									
Of all cases (%)	4	4	83	8	6	77	37	15	75
Of cases where question asked (%)	8	10	88	9	6	93	38	16	88
Total N[b]	115	115	111	123	123	117	123	123	105
N question asked	48	52	105	109	111	97	121	122	90
B Age 30 years or greater									
Question not asked (%)	64	57	3	30	29	17	14	12	12
Appropriate response									
Of all cases (%)	5	5	73	3	4	67	32	12	71
Of cases where question asked (%)	13	11	76	4	6	81	38	14	80
Total N[b]	63	63	60	66	66	63	66	66	58
N question asked	23	27	58	46	47	52	56	58	51
C No years of schooling									
Question not asked (%)	59	57	5	20	18	17	7	6	13
Appropriate response									
Of all cases (%)	1	1	80	4	1	73	32	5	69
Of cases where question asked (%)	2	2	84	5	1	88	35	5	80
Total N[b]	118	118	118	124	124	124	124	124	118
N question asked	48	51	112	99	101	103	115	117	103
D One or more years schooling									
Question not asked (%)	62	53	4	14	12	18	3	3	16
Appropriate response									
Of all cases (%)	10	12	79	11	14	73	42	32	84
Of cases where question asked (%)	26	25	82	12	16	89	43	33	100
Total N[b]	60	60	53	65	65	56	65	65	45
N question asked	23	28	51	56	57	46	63	63	37

[a]Age and educational attainment are taken from the BFS Standard Recode file, as matched to the transcript respondents.
[b]For specification of the reasons for missing cases, refer to the footnote for table 1. In addition to the reasons given there, transcripts which are not matched to Standard Recode file respondents are excluded from this table. (Thirty transcripts are not matched, but these include five missing from the analysis for other reasons as well.)

I **Well, how old are you?**
R Suppose I was married at the age of 12.

I **Now how old are you? You are married for seven years, isn't it? Then you were married at the age of 12, then you are 19 years old.**

In this instance, the interviewer calculated the age of the respondent's husband as well as the respondent's age on the basis of the information on age at marriage and duration of the marriage. Note that she did not ask the month and year questions for either the husband or the respondent.

Because duration of marriage was often estimated on the basis of the age of living children, the second most frequent method shown in table 3 ('age of child') was usually a component of the method just described. In the following excerpt, the two are employed together.

Transcript number 183

I **You are the head of this household?**
Husband Yes, I am the head of the household.

Table 3 Percentage distribution of methods of calculating age: respondent's current age in the household survey and in the individual survey, and respondent's age at first marriage

Method: information used	Age in household survey	Age in individual survey	Age at first marriage
Age or date of first marriage	84%	31%	–
Age of child	44	3	6%
Historical event	18	3	10
Menarche	–	–	32
Years ago	–	–	47
Household survey	–	66	–
Others	9	3	14
N[a]	108	70	62

[a]The two transcripts which contain household survey interviews only are excluded. Sixteen other transcripts are incomplete or unusable for the household survey interview. Four other transcripts are incomplete in the sections of the individual survey interview where current age and age at first marriage are asked about. Of the remaining cases, examined here are those where 'age' is asked by the interviewer (see table 1) *and* a method of calculation is evident.
NOTE: Percentages sum to greater than 100 because more than one calculation method may have been used.

I **Khela Rani is your wife. Chandra your daughter?**
Husband Yes.

. . .

I **Well, say your date of birth. You were born in which year and which month? Do you have your age record book?**
Husband I have birth record book, that is with my brother. Now I can't bring it.

I **If you can't say the date of birth, then your estimated age?**
Husband My age will be 25/26 years.

I **26 years?**
Husband Yes.

I **Can you say the date of birth of Khela Rani?**
R In the month of Vadra.

I **Can you say the year?**
R No.

I **You cannot say the year? Well, how old is Chandra?**
R 2 years.

I **Well, you were married at what age?**
R At 16 years.

I **How many years after your marriage did you have children?**
R 2 years.

I **Then, you are 20 years old.**

This excerpt illustrates an important finding evident in table 3 as well: the reporting of current age is often not independent of the reporting of the timing of marriage and of births. This finding has far-reaching implications for the interpretation and analysis of data from the BFS and similar surveys. Analysis often assumes explicitly or implicitly, independence in the collection of information on current age, nuptiality and fertility.[8] Moreover, the intimate linking during the interview of the three separate strands of information means that errors in the reporting of one (age at marriage, for example) can easily result in errors in the reporting of the others.

The third common method of calculating current age in the household survey interview was to make use of historical events. BFS interviewers were provided with a list of nine historical events to draw upon when using this method. Even so, confusion sometimes resulted, as in the following excerpt, where some discussion is required to distinguish between the war between India and Pakistan in 1965 and the war for independence of Bangladesh in 1971.

Transcript Number 073

I [to respondent's husband] **Can you say the date of birth, month and year, of your wife?**
Husband No.

I [to respondent] **How old are you, can you say that?**
R I will be less than 20.

I **How many years ago did you get married?**
R It has been seven years since we got married.

. . .

I **Well, I shall ask you a few questions. Did you get your menstruation after you were married?**
R I got it before my marriage.

I **How many years before marriage did you get your menstruation?**
R Say one, or six months before.

I **In my calculation, it is 20 years. Well, do you remember the war of 1965?**
R It has been a long time.

I **If you are 20 years old, then that was an event of ten years ago. I am not talking about the liberation of Bangladesh. Before that, there was a war between India and Pakistan in 1965.**
R That was five/six years before.

I **It is Bangladesh which became liberated five/six years before. I am not asking about that. I am asking about the period before the liberation of Bangladesh.**
R Yes, there was a war.

[8]Agarwala (1960), on the other hand, advocates calculating current age by summing reported age at marriage and marriage duration, on the assumption that this method yields more accurate reporting of age.

I **Yes, war. Do you remember that? How old were you then?**
R At that time I was five/seven years old.

I **You were five/seven years old then? If it is so, then your age comes to 17 at present.**
R Yes, it may be like that.

I **You have said that you are married for seven years, and got your menstruation one year before marriage, isn't it? According to this, your age comes to 20.**
R It may be 20.

I **Do you think that you will be 20 now?**
R Yes.

I **Should I write 20?**
R Yes.

The confusion about wars was resolved in this interview. The risk of confusing events is cited as a major weakness of the historical calendar approach (Seltzer 1973), and some of the interchanges in the transcripts show such confusion. More often, however, they suggest that historical events can be of some assistance:

Transcript Number 072

I **How old are your?**
R I can't say my age. At the time of the riot, I was 11 years old.

I **Which riot?**
R During the independence of India and Pakistan.

I **Well, how old were you then?**
R I was 11 years old then.

I **Then you are 40 years old. By my calculation, it comes to 40.**

The 'riot' referred to occurred in 1947. If the respondent is correct about her age at that time, her current age has been calculated with relative accuracy (within one year of her true age).

In the individual survey interview, the principal method of obtaining a current age was to take the age recorded in the household survey (table 3, second column). This was a natural solution for the interviewer to adopt: in the BFS, the household survey interview and the individual survey interview normally occurred during the same visit to a household. Hence the questioning about the respondent's age in the household survey interview had taken place, in most cases, merely five to fifteen minutes earlier, and, where it had been a difficult process, considerations of efficiency and courtesy encouraged the interviewer not to duplicate the process. Nevertheless, it was intended that this information should be gathered independently in the two surveys, as the interviewers were instructed:

> You must obtain the answer to these [date of birth] questions independently in the individual interview as if nothing were known to you from the household interview. In other words, never 'correct' the information in the individual interview from that obtained during the household interview (Bangladesh Fertility Survey 1975: 40).

Sometimes it was the respondent, however, and not the interviewer who drew upon the household survey in the individual survey.

Transcript Number 004

[Household interview]

I **Gita Rani, can you say the year and month of your birth? Can you tell your age approximately?**
R Say about 27/28 years.

I **Do you remember any events? The famine of the year 1350 or the storm of the year 1326? Do you remember all these?**
R No.

I [to other person, possibly husband] **How old is her eldest child?**
Other 13 years.

I **At the time of her marriage, how old was she then?**
Other She got married when she became grown up.

I **Then how many years after her marriage, her eldest son was born?**
Other That son died.

I **Died?**
Other She was married in 1365 and her son was born in the year 1368.

I **Well, your first son was born three years after your marriage. If he would be alive, then he would be 13 years old, isn't it?**
R No. He would be 14 years old.

I **Well, how old did you say she was?**
Other 28 years.

I **But according to my calculation she is about 31 years old. What should I write?**
R You write 31 years.

[Individual interview]

I **In which month and year were you born?**
R I don't remember that.

I **How old are you?**
R You have already written 30 years.

More commonly, though, it was the interviewer who made use of the household survey information rather than asking the date of birth questions again.

Transcript Number 143

[Household interview]

I **Ramani Bagchi, how old are you? Listen, during the time of partition, how old were you then?**
R I can't say that.

I **It has been how many years since you got married?**
R Twenty years.

I **How old were you when you got married? Have you had your puberty then?**
R Two years after my marriage, I gave birth to my first son.

I **Well, then your age is 30 years.**

[Individual interview]

I **Since your birth up to 12 years of age, the place where you lived, was it a village or town?**
R Village.

I **You don't know when you were born, but you told me approximately that you are 30 years old. Well, listen, have you read in school?**

The questions about date of birth follow the question about the type of place of residence of the respondent as a child. In this excerpt, at this point the interviewer draws on the household survey interview.

The transcripts indicate that interviewers were more likely to rely on the household survey with respondents whose current age was most difficult to estimate. In general, older respondents pose more difficulties, and the distributions in table 4 show that the household survey was utilized in the calculation of age in the individual survey more frequently for older women.

There is evidence that relying on the household survey did expedite the individual survey interview. An average of 4.7 statements by the interviewer was required to obtain the respondent's age in the household interview, whereas only 2.9 statements were used in the individual interview. It is very apparent that a considerable amount of difficult ground was covered in the first interview which was often not retraced in the second.

Dating the first marriage presented the interviewer with a slightly different task, since, as we noted above, she was instructed to record a calendar year, not an age, when a calendar date was not directly provided by the respondent. Thus it is not surprising that the most frequently used method for dating the first marriage was one we have labelled 'years ago' in table 3. Under this approach, when the respondent could not provide a date, the interviewer simply asked how many years ago the marriage occurred, presumably arriving at a date of marriage by subtraction.

Transcript Number 108

I **Well, in which month and year did you get married? Which year? Can you tell?**
R No.

I **How old were you when you got married? How old?**
R

I **Don't know? How long are you married?**
R It will be six or seven years.

I **Seven years, isn't it?**

The second method commonly used to date the first marriage was to ascertain its timing relative to the attainment of puberty (menarche). The transcripts rarely show the entire calculation by the interviewer, as several steps are required and usually some are not vocalized.

Transcript Number 186

I **In which year and month did you get married?**
R No.

I **When you got married, how old were you then?**
R I can't say exactly how old I was then.

Table 4 Percentage distribution of methods of calculating age: respondent's current age in the household survey and in the individual survey, and respondent's age at first marriage, by current age of respondent[a]

Method: information used	Age in household survey		Age in individual survey		Age at first marriage	
	age[a] < 30	30+	age < 30	30+	age < 30	30+
Age or date of first marriage	85%	87%	40%	26%	–	–
Age of child	54	56	0	4	3%	12%
Historical event	17	13	3	4	8	12
Menarche	–	–	–	–	23	41
Years ago	–	–	–	–	54	24
Household survey	–	–	57	70	–	–
Others	4	5	6	0	17	18
N[b]	54	39	35	27	35	17

[a]Age is taken from the BFS Standard Recode file, as matched to the transcript respondents.
[b]For specification, refer to the footnote for table 3. In addition to the reasons given there, transcripts which are not matched to Standard Recode file respondents are excluded from this table. (Thirty transcripts are not matched, but these include 20 missing from the analysis for other reasons as well.)
NOTE: Percentages sum to greater than 100 because more than one calculation method may have been used.

I **How many years after your marriage did you get puberty?**
R Three years after.

The BFS interviewers were instructed to take 13 as the age at menarche, when no information to the contrary was available. Under this assumption, the interviewer in this excerpt should have calculated an age at first marriage of ten years. In fact, the final record for this respondent shows this age.

Other data from Bangladesh suggest that an assumed age at menarche of 13 years is too young. For example, data from Matlab *thana* indicate a median age at menarche of 15 years during the 1970s (Chowdhury *et al* 1977). Assuming too young an age at menarche when calculating age at marriage will, in general, result in an estimated age at first marriage which is also too young.[9] This may account, in part, for the unexpectedly large proportion of women in the BFS reported as first marrying before age ten or twelve (Ministry of Health and Population Control 1978: 34). It may also account, in part, for the trends in age at first marriage over cohorts, because the first marriage of older respondents was more often dated by its timing relative to menarche (see table 4, fifth and sixth columns). The greater reliance on menarche with older respondents is compensated by much less use of 'years ago'. It is quite sensible that marital duration (ie years ago) is more readily and precisely obtained from respondents whose marriage is more recent, that is, younger respondents.

4.2 CONCEPTUAL ISSUES: RESPONDENT UNDERSTANDING

We briefly consider here the respondent's understanding of the date of event questions and her ability to respond appropriately. There is little evidence in the transcripts of incomprehension of the date of event questions, in contrast to the items considered in sections 6 and 7 of this report. Hence, we focus on the provision of appropriate responses.

The overall percentage of women supplying appropriate responses (births, years, or ages) is obviously in part a function of the level of question omission. In tables 1 and 2, we present the percentage supplying appropriate responses with either the total number of respondents (second row) or the number of respondents asked the question (third row) as the base. Limiting our discussion here to the second set of percentages, it is interesting to note that age was far more likely to be supplied than information on the calendar date, and that the date of first marriage (the month in particular) was more likely to be reported by the respondent than her date of birth. The latter finding is hardly surprising, as the respondent may remember her first marriage (it may even be rather recent) but of course cannot remember her birth. These differentials are essentially the same within age and educational strata (table 2). Educational differences in the reporting of first marriage are evident: the month of first marriage was reported by almost the same percentage of less and more educated respondents, but the year of first marriage was much more likely to be reported by women with some schooling (compare row 3 of panels C and D). The more educated respondents were also much more likely to supply a month and year of birth, when asked, in the household survey interview. While the educational differentials in provision of month and year information are more marked than the age differentials, the opposite holds for the provision of age information. When asked, older women are less likely to report a current age (in both surveys), but educational differentials are slight.

It is interesting to note the similarities in the respondent's ability to date her first marriage (table 1) and the termination of her pregnancies (in the pregnancy history section of the individual interview; see section 5 below, table 5). The percentage of appropriate responses is very similar, as might be expected, since the respondent's marriage is almost as recent as her first pregnancy. Dating of the two is similar also in the sense that the month is much more likely to be provided than the calendar year, in contrast to the respondent's date of birth. Thus, the events of interest in the BFS can be classified into two groupings with respect to the respondent's ability to provide dates. Age at marriage and the termination of pregnancies (mainly live births) comprise one group; these are events which the respondent can remember. The transcripts show clearly that respondents were more likely to remember the month than the year of such events. The respondent's date of birth falls into the second group; the respondent cannot remember this event and hence can only report what others (presumably usually her parents) have told her. The transcripts indicate that she is no more likely to be told (or remember being told) a month than a year of birth.

4.3 SUMMARY

The main findings of our analysis of the reporting of current age and age at first marriage are as follows.

1 Interviewers frequently did not ask for the calendar dates of birth and first marriage.
2 Older women, in particular, were less likely to be asked for a calendar date.
3 When asked, respondents seldom were able to supply a month and year of birth, nor a year of first marriage. About one-third of the respondents were able to supply a month of marriage.
4 In the household survey interview, the primary method of calculating current age was to make use of information on the date or age at first marriage and the duration of the marriage. That is, the reporting of current age and of the timing of marriage (and often childbearing as well) were intimately linked.
5 Current age in the individual survey was frequently obtained directly from the household interview. This occurred quite naturally in the BFS, because the interviews for both surveys typically occurred during the same visit of the interviewer to the household.
6 A common method of determining the age at first marriage was to ascertain its timing relative to menarche. This method requires an assumption about the usual age at menarche. The assumed age used by the BFS inter-

[9] When current age is calculated by summing age at marriage and marital duration, assuming too young an age at menarche in estimating age at marriage will lead to an underestimate of current age as well.

viewers may have been in error as a general standard and no doubt was inapplicable in many individual cases.

When respondents are unable to supply dates or ages, a method of estimation must be employed. The possibility of errors in the estimates cannot be eliminated. Reading the transcripts, we are impressed overall with the effort and skill the BFS interviewers applied to the task of obtaining sensible data on current age and age at marriage.

5 The Pregnancy History

The dating of pregnancies presented difficulties for the respondent – and consequent difficulties for the interviewer – which were similar to those presented by the dating of the respondent's birth and marriage discussed in section 4. Indeed, our analysis reveals that the dating of these events was bound together. Hence, while we here consider separately the dating of pregnancies, it is not surprising that some of the findings in this section resemble those in the previous section.

The dating of pregnancies requires separate attention because of the interview dynamics resulting from the effort to obtain not just one date but a sequence of dates. It was this effort to reconstruct a pregnancy *history* that was so demanding of both the respondent and the interviewer. A cursory reading of the transcripts makes clear that for all but the lowest parity women the pregnancy history was, along with the household listing in the household survey interview, the most time-consuming section of the BFS interview. A successful outcome to this extended inquiry was essential if the survey data are to serve as a valid source for estimating fertility levels and trends. It was hoped that inclusion of the detailed pregnancy history would, first of all, ensure more complete coverage of live births. The correct dating of recent live births was also necessary for valid estimation of recent levels of fertility. Finally, any assessment of trends in fertility based on the BFS data alone requires accurate dating of births in the more distant past.

The respondent's lack of knowledge of the precise information requested in the pregnancy history was the underlying cause of most of the interviewing difficulties. In this section, a 'don't know' response was not adequate and, furthermore, the dates or ages supplied for the respondent (ie her own age and age at marriage) and her children (their births) needed to be roughly consistent. The following excerpt is typical of the sorts of problems encountered.

Transcript Number 109

I **Tell me the name of your first child.**
R Delwar Hossain.

I **Was there any pregnancy after your first marriage and before the birth of Delwar?**
R No.

I **In which year and month was Delwar born?**
R I can't say that.

I **How many years ago? Say twenty years?**
R That I don't remember. I can't say. You write it of your own choice.

I **Tell me approximately. I have to write what you will say. It cannot be right if I write it from my own choice.**
R Write it twenty-five.

I **You are telling me all haphazardly. Say it properly.**
R You write it. I can't even guess.

I **When did you get married? What have you said?**
R At the age of 14.

I **14 years?**
R Yes.

I **Then, twenty-one years ago you got married. Well, when was your first child born after your marriage?**
R Three years.

Confronted with the respondent's frequent inability to provide the requested month and year information, the interviewers adopted a variety of strategies for handling the pregnancy history section. Often the interviewers simply did not ask for month and year information. In section 5.1 we examine the incidence of such omission of questions and its association with characteristics of the interview and the respondent. When the questions were asked, appropriate answers were not always supplied. In section 5.2 we consider the correlates of the provision or non-provision of month and year information. When (month and) year information was not obtained from the respondent, information on the 'years ago' of the birth (equivalent to current age of the child) had to be obtained. The transcripts are revealing of many methods used by interviewers and respondents to determine the number of 'years ago' a birth occurred, and we review these in section 5.3. In section 5.4, we examine the interchange about the open interval, which is of special interest because of its relevance for the estimation of fertility and infant mortality in the period immediately preceding the survey.

5.1 PROCEDURAL ISSUES: INTERVIEWER QUESTIONING

The BFS questionnaire required the interviewer to ask the calendar month and year of each pregnancy. Failing to obtain at least the year, the interviewer was instructed to inquire about the 'years ago' of the event, which is equivalent to the age of a living child at the time of the survey. Table 5 shows the percentage of pregnancies for which interviewers failed to ask the required questions. The percentages in the first row indicate that frequently the questions were not asked. This in itself is an important finding. But the transcripts reveal much more about the interviewer questioning and how it fits into the dynamics of the interview.

Table 5 Pregnancy history: percentage of pregnancies with question not asked and percentage receiving appropriate response, by type of question

	Type of pregnancy history question		
	Month of end of pregnancy	Year of end of pregnancy	Years ago or current age of child
Question not asked (%)	58	60	42
Appropriate response			
Of all cases (%)	21	12	54
Of cases where question asked (%)	52	32	96
Total N[a]			
Pregnancies	898	898	801
Transcripts	197	197	173
N Question asked[b]			
Pregnancies	356	339	439
Transcripts	136	138	145

[a]Excluded are transcripts for women with no pregnancies (17) and transcripts which terminate before the pregnancy history section (4).
[b]In addition to the transcripts referred to in footnote a and cases where the pertinent question was not asked, excluded are pregnancies where the response is not clear in the transcript: 25, 22, and 22 pregnancies for the month, year and years ago/current age questions, respectively.

Table 6 Percentage of questions not asked, by respondent's total pregnancies and by pregnancy order

Total pregnancies	Pregnancy order 1	2	3	4	5	6	7	8+	Total	Number of pregnancies
A Question: month of pregnancy										
1	20								20	30
2	32	40							36	50
3	44	44	56						48	75
4	42	46	50	46					46	96
5	45	55	45	68	68				56	110
6	48	70	70	70	65	74			66	138
7	33	67	61	78	61	61	61		60	126
8+	23	47	70	80	83	83	80	70	67	273
Total	35	51	59	68	71	75	73	70	58	898
B Question: year of pregnancy										
1	17								17	30
2	28	40							34	50
3	48	48	60						52	75
4	42	54	54	58					52	96
5	45	55	50	68	82				60	110
6	43	65	70	65	61	78			64	138
7	33	61	61	78	61	67	72		62	126
8+	30	53	77	77	83	87	83	75	71	273
Total	35	53	63	69	73	79	79	75	60	898

First of all, it should be noted that the questioning in the pregnancy history repeated much of the questioning of the household survey, where the date of birth of each member of the household was requested. (Recall that in the BFS the two interviews almost always occurred during the same visit.) When these calendar date questions were difficult for the respondent, it is understandable that the interviewer should draw upon the results of the household survey to ease the passage through this section. Indeed, the transcripts sometimes show that the respondent was puzzled or angered by the repetition of questions about the dates of birth of her children.[10]

[10] We accept, for the time being, that the interviewer's responsibility was to repeat questions in the pregnancy history even when the appropriate information had already been obtained in the household survey. In later discussion, we consider whether this is a necessary or reasonable requirement.

Secondly, the omission of the month and year questions was not uniform over the pregnancy history. On the contrary, the interviewers were much more likely to ask the month and year of the respondent's first pregnancies and then, as the history proceeded, to rely increasingly on other methods of dating. This is documented in table 6 which shows, for month and year separately, the percentage of pregnancies for which the question was omitted, broken down by the respondent's total pregnancies and by pregnancy order. Higher order pregnancies were clearly less likely to be subjected to both the month and year questions.

The transcripts suggest several reasons for this. As the questioning proceeded in this section, the interviewer learned more about the capacity of the respondent to supply answers. If the respondent was unable to supply answers, and especially when the effort to obtain them was awkward or time-consuming, the interviewer switched to other methods, as the following excerpt illustrates.

Transcript Number 105

I **Now, I will ask you about each of your pregnancies. Such as every live birth, every still birth, abortion. I want to know about each of this type of pregnancy. If you have children that are dead or now stay away from you, tell me about them also. What is the name of your first child?**

R Her name is Kalpana.

I **Her name is Kalpana, isn't it? Well, after you were married and before the birth of Kalpana, did you have any other pregnancy?**

R No.

I **Well, Kalpana was born in which month and year, can you say?**

R Falgoon month.

I **You have told the month, but you could not tell the year. Well, Kalpana was born how many years ago? If she was alive now, how old would she be? How many years older was she than your son?**

R That one died after living one year. Then after two years, this one was born.

I **That one was born and lived one year. Then again after two years he was born. Then three years? That is, this one was born after three years. Three years younger than Kalpana. This one 3 years old and Kalpana is 6 years old. Kalpana was a girl, isn't it?**

R Yes, girl.

I **Now she is not alive.**

R No, she is not alive.

I **How long she lived?**

R One year.

I **She died after that, isn't it? Well, what is the name of your next child after Kalpana?**

R Wares.

I **Wares. Well, your first child after Kalpana was Wares. Well, after Kalpana and before Wares did you have any other pregnancy?**

R No, no.

I **You did not. Well, Wares was born three years ago. Wares is a boy.**

R Yes.

I **Is he alive?**

R Yes.

I **Well, did you have any other pregnancy after Wares?**

R No, no.

This interviewer concluded that month and year, as well as 'years ago', information on Kalpana could not be readily supplied by the respondent. She knew from the household survey that Wares was three years old, and she used this information to calculate an age for Kalpana. She then asked the respondent to simply verify the information about Wares that she had obtained previously: that he was three years old and a boy. The advantages for the interviewer of adopting the briefer questioning approach, in this case for Wares, are very apparent. There is no way to judge from the transcripts whether the validity of the data suffers.

A second reason for the association between pregnancy order and omission of the month and year question is that alternative methods of inquiry became more appropriate as the history developed. For example, the use of birth intervals for dating was an available method once the date of birth or age of one child had been settled. (Sometimes the critical event was the respondent's date of marriage.) The following excerpt shows how this method was adopted.

Transcript Number 190

[first child]

I **Can you say in which year and month Mustafa was born? How old is he? Can you say how many years ago he was born?**

R Ten years ago.

[no date or age questions were asked about the second child, Rehana]

[third child]

I **How many years after Rehana, Farid was born?**

R After three and a half years.

[fourth child]

I **How many years after Farid, Minara was born?**

R Three years after Farid, Minara was born.

The interviewer began by asking the year and month of birth for Mustafa, but failed to obtain a response until she asked how many years ago the child was born. No age questions were asked about the second birth, Rehana, while the final two were dated by intervals alone.

Among the variables we have examined, the order of the pregnancy is the dominant determinant of whether the

Table 7 Percentage of questions on year of end of pregnancy not asked, by selected variables: unadjusted, and adjusted for other variables

Variable and category	Unadjusted (1)	Adjusted[a] (2)	(3)	(4)	(5)	Number of pregnancies
Grand mean percentage not asked	58					
Pregnancy order						
1	35	38	38	38	34	170
2–4	59	58	59	59	59	359
5+	74	73	73	73	76	221
Total pregnancies of respondent						
1–2	27	44	45	44		71
3–4	55	59	56	56		146
5+	63	61	61	61		533
Recency of pregnancy[b]						
Last 5 years	54	54	55	55	52	220
More than 5 years ago	60	60	59	59	61	530
Interview month						
December 1975	37		37	40	39	177
January 1976	58		57	56	57	271
February 1976	66		69	65	65	151
March 1976	75		74	76	74	151
Type of place of residence						
Rural	64			64	62	484
Urban	48			49	51	266
Education of respondent						
None	64				61	516
1+ years	46				52	234
Total pregnancies[c] 750						
Total transcripts[d] 170						

[a]Each variable is adjusted, by multiple classification analysis (MCA), for the other variables with values shown in the same numbered column.
[b]This variable makes use of transcript information and information in the Standard Recode file for the BFS.
[c]Excluded from the table are pregnancies from transcripts which are not matched to a Standard Recode file respondent (148).
[d]Excluded from the table are transcripts for women with no pregnancies (17), transcripts which terminate before the pregnancy history section (4), and remaining transcripts not matched to a Standard Recode file respondent (27).

month and year (and years ago) questions were asked. The relationship of this variable and several others to the omission of the year question is summarized in table 7, which shows percentages of questions not asked for categories of selected variables.[11] Here we note again the importance of pregnancy order and, in particular, that the first pregnancy was much more frequently subjected to the year question.

Further findings in table 7 are the following:

1 the total number of pregnancies of the respondent affected the questioning, even net of the effect of pregnancy order (and the education and place of residence of the respondent). Women with more pregnancies were less likely to be asked the year each pregnancy terminated;
2 there was a slight tendency for more recent pregnancies to be more frequently subjected to the year question;
3 there was a strong tendency for the rate of question omission to increase over the survey period, from December 1975 to March 1976;
4 omissions were slightly more likely to occur when the respondent was rural and less educated.

Finding (3) suggests that as the fieldwork progressed, interviewers evolved methods of dating pregnancies which increasingly diverged from the format provided in the questionnaire. It is reasonable to surmise that the interviewers adopted these methods as a response to their futile experiences when following the requested questioning procedure.

5.2 CONCEPTUAL ISSUES: THE PROVISION OF APPROPRIATE RESPONSES

The percentages in the second panel of table 5 indicate that the respondent was not always able to provide an appropri-

[11]The relationships of these variables with omission of the month question are essentially the same.

ate response when asked the month and year questions. A 'years ago' response was almost always obtained when requested, however. Note that respondents were more likely to provide the month of a pregnancy termination than the year (52 and 32 per cent, respectively).[12] This pattern is of interest because the month of birth was not recorded in the BFS unless the calendar year was also known. If a respondent knew only the month, an age of the child was ascertained and this was recorded (as 'years ago'). Later, in the data processing, a calendar month and year were imputed without making use of the known (but not recorded) calendar month information. There would seem to be potential for gain in precision by using the reported years ago in conjunction with the calendar month, rather than imputing on the basis of years ago alone (see, for example, Becker and Mahmud, forthcoming). The following excerpt is a case in point.

Transcript Number 145

I **In which year and month Shahana was born?**
R She was born on Thursday.

I **In which month?**
R In the month of Ashwin according to Bengali months.

I **In which year?**
R On the 6th of Ashwin.

I **Then in which year was she born?**
R I do not understand year.

I **You do not know what is called year. Then, how old is she?**
R Two years completed, and now running three years.

I **She has completed two years, but you cannot say the exact year?**
R Two years, three months.

Although this respondent could not identify the calendar year in which her child was born, she knew precisely when the birth occurred. In this case, the interviewer computed a year of birth and recorded both the month and year of the birth in the questionnaire. The BFS interviewers were encouraged to follow this practice, especially for recent births, but were not required to do so and sometimes did not. The following excerpt provides a good illustration of how much information can be lost when this practice is not followed.

Transcript Number 004

[the child Ashok]

I **In which year and month was he born?**
R In the month of Bhadra.

I **In which year?**
R I do not remember the year.

I **Then how old is he?**
R Six years old.

[next child]

I **In which year and month Jayonti was born?**
R In the month of Agrahayan.

I **Do you remember the year?**
R No.

I **How old is she?**
R She is 5 years old.

[the next child, Maloti]

I **In which year and month was she born?**
R In the month of Ashar. She is 1½ years old.

The ages of these three children are recorded in the questionnaire as 6, 4 and 2, and dates of births have been imputed for these births based on these recorded ages. This interview took place in January 1976. Converting Bengali months to our approximate English equivalents, using the reported ages to calculate a year of birth, and assuming (with the interviewer) that the age of the second child was reported in rounded years, we arrive at dates of birth for these children of 8–9/1969, 11–12/1971 and 6–7/1974. The imputed dates contained in the BFS Standard Recode file are 2/1970, 8/1971 and 1/1974, respectively. The first and last births are in error by six months, while the middle birth is in error by ten months, and the interval between the first and last birth has been reduced by an entire year. In short, when the pregnancies are recent, as in the cases just cited, information on month of termination would seem to create the possibility of greatly improved precision in dating. There is probably much less potential for gain in precision for pregnancies which occurred many years prior to the survey, however, because of the extent of uncertainty about years ago or age.

We have examined the association of a large number of variables with the provision of month and year information. (There is little point in considering the predictors of the small proportion (4 per cent) of cases where 'years ago' was not provided.) The variables found to be important predictors are shown in tables 8 and 9, for month and year respectively. We present unadjusted percentages of questions receiving appropriate responses, and percentages adjusted (by multiple classification analysis) for other variables in the tables.

We may briefly summarize the findings in the two tables as follows.

1 The respondent's total number of pregnancies shows a curvilinear relationship with the provision of an appropriate response: respondents with three or four pregnancies show the lowest level of response. We have no explanation for this pattern.
2 Recent pregnancies were much more likely to be ascribed a month and year by the respondent. We say more about this strong relationship below.

[12] Chowdhury (1977) reports an even more marked differential between the ability to report calendar months and years, but the pregnancies in his study were more recent relative to the survey date. Edmondston (1980) also reports much better recollection of months than years.

Table 8 Percentage of month questions receiving appropriate response, when asked, by selected variables: unadjusted, and adjusted for other variables

Variable and category	Unadjusted (1)	Adjusted[a] (2)	(3)	(4)	(5)	Number of pregnancies
Grand mean percentage appropriate response	50					
Total pregnancies of respondent						
1–2	65	54	52	56		49
3–4	37	34	38	38		71
5+	51	55	54	53		180
Recency of pregnancy[b]						
Last 5 years	66	67	68	67	66	102
More than 5 years ago	42	41	41	41	41	98
Interview month						
December 1975	61		52			96
January 1976	42		51			112
February 1976	47		50			55
March 1976	49		42			37
Co-operativeness of respondent						
Bad and fair	28			35	36	125
Good	61			54	53	123
Very good	77			75	76	52
Region of residence						
Rajshahi	33		29	34	31	48
Khulna	60		59	59	63	93
Dacca	67		69	59	58	90
Chittagong	26		29	37	35	69
Type of place of residence						
Rural	44				46	176
Urban	58				56	124
Education of respondent						
None	44			46		186
1+ years	60			56		114
Religion of respondent						
Muslim	54				54	230
Others	36				36	70
Total pregnancies[c] 300						
Total transcripts[d] 118						

[a]Each variable is adjusted, by multiple classification analysis (MCA), for the other variables with values in the same numbered column.
[b]This variable makes use of transcript information and information in the Standard Recode file for the BFS.
[c]Excluded from the table are pregnancies from transcripts which are not matched to a Standard Recode file respondent (148), additional pregnancies for which the month question was not asked (432), and finally pregnancies where the response to the month question is not clear in the transcript (18).
[d]Excluded from the table are transcripts for women with no pregnancies (17), transcripts which terminate before the pregnancy history section (4), remaining transcripts not matched to a Standard Recode file respondent (27), remaining transcripts in which the month question was asked of no pregnancies (34), and finally transcripts in which the responses to the month question are not clear (18).

3 There was a tendency for the frequency of appropriate responses to the year question to fall as the survey period progressed. The same did not applv to responses to the month question.

4 At the termination of the interview, the interviewer rated the 'co-operativeness' of the respondent during the interview. The BFS Interviewer's Manual describes this rating as follows: 'Note that we are not asking how readily the respondent replied to the questions, nor are we asking about the reliability of the questions, but about how co-operative she was during the interview' (p68). Table 8 shows that respondents rated as more co-operative were much more likely to provide month of the pregnancy; the relationship with provision of year of the pregnancy was not consistent (table 9).

5 At the end of the pregnancy history, the interviewer

Table 9 Percentage of year questions receiving appropriate response, when asked, by selected variables: unadjusted, and adjusted for other variables

Variable and category	Unadjusted (1)	Adjusted[a] (2)	(3)	(4)	(5)	Number of pregnancies
Grand mean percentage appropriate response	32					
Total pregnancies of respondent						
1–2	45	33	33			51
3–4	23	21	26			64
5+	31	35	33			180
Recency of pregnancy[b]						
Last 5 years	48	50	51	49	48	95
More than 5 years ago	24	23	23	23	24	200
Interview month						
December 1975	46		38		40	104
January 1976	28		39		33	108
February 1976	20		20		19	49
March 1976	18		9		20	34
Co-operativeness of respondent						
Bad and fair	11			28		122
Good	49			36		124
Very good	39			29		49
Reliability of pregnancy history						
Poor	13			20	22	141
Fair and good	48			42	40	154
Region of residence						
Rajshahi	10		4	17	14	47
Khulna	40		36	43	38	90
Dacca	46		52	34	39	93
Chittagong	15		18	26	25	65
Type of place of residence						
Rural	20			20		166
Urban	47			47		129
Education of respondent						
None	15				19	176
1+ years	57				51	119
Total pregnancies[c] 295						
Total transcripts[d] 120						

[a]Each variable is adjusted, by multiple classification analysis (MCA), for the other variables with values in the same numbered column.
[b]This variable makes use of transcript information and information in the Standard Recode file for the BFS.
[c]Excluded from the table are pregnancies from transcripts which are not matched to a Standard Recode file respondent (148), additional pregnancies for which the year question was not asked (436), and finally pregnancies where the response is not clear in the transcript (19).
[d]Excluded from the table are transcripts for women with no pregnancies (17), transcripts which terminate before the pregnancy history section (4), remaining transcripts not matched to a Standard Recode file respondent (27), remaining transcripts in which the year question was asked of no pregnancies (32), and finally transcripts in which the responses to the year question are not clear (18).

judged the 'reliability' of responses in that section. The BFS Interviewer's Manual indicates that reliability was to be judged according to whether 'the respondent was able to answer most of the questions with ease and directly, dates (months and years) of all births and pregnancies were obtained without difficulty . . .' (p49). The histories judged as more reliable contain far more responses to the year question. They also contain more responses to the month question, but this differential disappears when 'co-operativeness' is controlled. (The reliability differentials are not shown in table 8.)

6 Appropriate responses were more likely in urban areas and, among the major regions of Bangladesh, in Dacca and Khulna. (Some of the effect of Dacca is due to its more urban composition; note column (5) in table 8 and column (4) in table 9.)

7 Better educated women were more likely to provide responses to the month and, especially, the year questions.
8 Muslim women more frequently knew the month of a pregnancy, but not the year (the latter not shown in table 9.)

Some amplification on finding (2) is in order. It is understandable that respondents were more able to report the month and year of more recent pregnancies. The differential shown in tables 8 and 9 probably exaggerates this effect, however. The pregnancy history proceeded forwards from more distant to more recent pregnancies. If the interviewers learned from questioning about earlier pregnancies that respondents had difficulty supplying month and year information and, as an adaptive response, asked for years ago or age instead, the respondents asked for the month and year of recent pregnancies were disproportionately those able to provide the information. Such a process of selection would, in itself, lead to an apparent relationship between recency of the pregnancy and the provision of calendar date information.[13]

We have gone into some detail on the correlates of the provision of date of birth information. We also argued that potentially useful information was lost through failure to record the reported month. But even month was only supplied for about half of the pregnancies (see table 5) and was never higher than two-thirds (in Dacc region) among the socio-economic subgroups considered in table 8. Moreover, even when the month was known, information on year, years ago, or age was required to date a pregnancy. The figures in table 5 suggest an almost perfect capacity of respondents to provide years ago or age information, but in fact it is misleading to take this at face value. Frequently the respondent was unable to provide this information when first questioned. Thus, because the interviewer was instructed to record, at a minimum, the number of years ago or age for each pregnancy, these were obtained by a variety of methods of calculation. We examine some of these methods below.

5.3 PROCEDURAL ISSUES: THE CALCULATION OF CHILDREN'S AGES

The transcripts reveal that the interviewers employed many different methods of calculating ages (or years ago) when these were not spontaneously provided. Several of the methods are similar to the methods of calculating the respondent's current age or age at first marriage which are described above. Despite some overlap with the earlier discussion, we review each of the most common methods, with illustration from the transcripts. The relative frequency of use of each method is shown in table 10.

The most frequent method of dating a pregnancy was with reference to the previous pregnancy. The interviewer in Transcript Number 190 (section 5.1) used this method for the youngest two children. Many respondents, when asked for a particular child's age, replied that the child was born a certain number of years after the previous child. Since respondents seemed readily able to supply this information, interviewers were often quick to seize upon it. The following excerpt illustrates one of the pitfalls of this method of dating births.

Transcript Number 109

I **Tell me the name of the child who is after Khaleda.**
R Amanullah.

I **Well, before Amanullah and after Khaleda Begum, was there any pregnancy?**
R No.

I **In which month and year was Amanullah born?**
R I don't remember.

I **How many years ago was he born? How many years after Khaleda was he born?**
R Three years.

I **Three years after. You are not telling me properly about the age. You mixed up all the ages. You have given Amanullah's age** [household interview] **as 10. But according to what you say, it is 8. How old is Amanullah?**
R Amanullah is 16 years old.

I **Then you didn't say the right age.**

This interviewer dated the birth of each child with reference to the previous child (having calculated an age for the oldest child from other information). But when she arrived at the youngest child, she noticed that his implicit age was not consistent with information obtained in the household interview. Indeed, as the interviewer then learned, the problem was more serious than she had realized! Unfortunately

Table 10 Percentage distribution of pregnancies by methods used to calculate 'years ago' or age in the pregnancy history

Method	Percentage of pregnancies
Previous pregnancy	67%
Household interview	16
Age/date of marriage	8
Subsequent pregnancy	6
Historical event	4
Other	4
Number of pregnancies[a]	336
Number of transcripts	121

[a]The 336 pregnancies are those for which there is evidence of calculation of years ago or age either by the respondent or the interviewer.

NOTE: Percentages sum to greater than 100 because more than one calculation method may have been used.

[13] But such evidence as the transcript provides suggests the selectivity is not severe: for example, if we compare those respondents questioned about the year of termination of recent pregnancies (within five years of the survey) with respondents not questioned about recent pregnancies, 73 per cent of the former group (24 out of 33) supplied no appropriate responses whereas 83 per cent of the latter group (44 out of 53) supplied no appropriate responses. These percentages are essentially the same.

the transcript ends at this point so we do not learn how the interviewer resolved the discrepancy.

The heavy reliance on intervals between children as a basis for ascertaining dates of birth or ages essentially confirms the suspicions of Potter (1977), who, coincidentally, analyses data from Bangladesh (but not the BFS) to support his argument about the sources and forms of errors in the estimates of fertility trends from maternity history data. As the findings of Becker and Mahmud (forthcoming) suggest, the danger when births are dated by intervals is that errors in the dating of one birth will be carried over to others.

The second most prevalent method of obtaining an age was to draw on information gathered in the household survey. The previous excerpts from Transcripts 104 and 109 illustrate this technique. More obvious examples, however, are shown in the following two excerpts. The first is a pregnancy history in which the interviewer asks virtually no questions about the dates of each pregnancy, presumably filling in the questionnaire from information obtained in the household interview.

Transcript Number 214

I **Well, what is the name of your first child?**
R Yusuf.

I **After your marriage and before the birth of Yusuf, was there any other pregnancy?**
R

I **Who is after Yusuf?**
R Jahan.

I **Between Yusuf and Jahan, was there any other pregnancy?**
R

I **Well, who is after Jahan?**
R Shahinoor.

I **Was there any pregnancy between Jahan and Shahinoor?**
R

I **You have these children, isn't it?**
R Yes.

The second excerpt illustrates an evolution on the part of the interviewer away from obtaining the information directly from the respondent towards taking it from the household survey.

Transcript Number 120
[first birth]

I **In which month and year was Khalil born? Can you say?**
R No, I can't.

[second birth]

I **Well, how many years after Khalil, that child was born?**
R Three years after.

[third birth]

I **How many years after that child was Sonabanu born?**
R Two years after.

[fourth birth]

I **How many years ago was Alam born?**
R Thirteen years.

[fifth birth]

I **Khairul is 11 years old, isn't it? This is your son, isn't it? Alive?**
R Yes.

[sixth birth]

I **How many years ago was Anwara born? Eight years?**
R Yes.

[seventh birth]

I **How many years ago was Muktar born? Six years, isn't it?**
R

[eighth and last birth]

I **How old is Dholina?**
R

I **Is this your son or daughter? Daughter, isn't it?**
R Daughter.

I **How old is she?**
R 1 year.

I **1 year or 2 years?**
R

The main danger of relying on the household survey in this way is that errors will be carried over from the household survey to the pregnancy history. When the interviewer asked for calendar dates in the household interview, one might argue that more valid data would not have been obtained by asking for the same information again in the pregnancy history. When only age was obtained in the household survey, however, there are serious implications in recording it in the individual survey instead of trying to gather calendar date information or to make another best estimate of age. Demographic analyses of household survey data from Bangladesh and elsewhere in south Asia have repeatedly indicated that the ages of young children are overestimated or that young children are underenumerated (see, for example, Blacker 1977; Committee on Population and Demography 1981; United Nations 1967).

The third method identified in table 10 – use of the 'age/date of marriage' – was employed most frequently to date the first birth (24 out of the 28 occurrences). An example of this method, in combination with several others, is contained in Transcript Number 109 (excerpted above). The following excerpt offers a further, less complicated, example.

Transcript Number 016

I **In which month and year did you have that miscarriage?**
R That miscarriage?

I **Yes.**
R In Jaista.

I **Jaista. Can you say the year?**
R I can't say the year.

I **Well, after how many years of marriage?**
R Four years after the marriage.

I **Four years after, isn't it? You are married for twenty-one years. That child was four years after your marriage.**
R Yes, after four years.

I **OK.**
R Bilquis Ara was born one year after that child.

I **Bilquis Ara was born one year after, isn't it?**
R Bilquis is born one year after just because of the miscarriage.

I **It was the story of seventeen years ago. If that child was alive, he would be 17 now.**
R Yes.

Here the interviewer calculated the respondent's duration of marriage from information gathered earlier on the respondent's age at marriage (16 years) and her current age (37 years). Knowing that the miscarriage occurred four years into the marriage, she was able to assign it a 'years ago'.

The next dating method – use of a subsequent birth or pregnancy – like the first method relies on information on pregnancy intervals. We distinguish dating by previous intervals from dating by subsequent intervals, because the latter was used much less often and in special circumstances: usually when a particular pregnancy was not as significant for the respondent as the subsequent one (for instance, a pregnancy which miscarried, a child who died, or a daughter).

Transcript Number 001

I **What is the name of your first child?**
R Santana Begum.

I **After your marriage and before the birth of Santana, was there any other pregnancy?**
R No.

I **Can you say the month and year of birth of Santana?**
R

I **Well, Akram was born after Santana, isn't it?**
R Yes, Akram.

I **How many years before the birth of Akram was Santana born?**
R Three years before.

I **Then your Santana will be 20 years old. Will she be 20?**
R She may be 20 years old.

I **This is your daughter, isn't it?**
R Yes, daughter.

In this example, the respondent was able to tell the interviewer how many years before the birth of her first son the child Santana was born. The interviewer knew the age of Akram from the household interview, and thus she was able to calculate an age for Santana.

The historical event most often referred to when utilizing the fifth method shown in table 10 was the Bangladesh war of liberation, which occurred approximately five years before the fielding of the BFS. Respondents frequently knew how old a child had been at the time of the war. Particularly severe famines and floods were also used, as well as the 1965 war between India and Pakistan and unusual fluctuations in the price of rice. The following excerpt illustrates an interviewer using the liberation war to date a child's birth.

Transcript Number 133

I **Well, in which month and year was Khabir Alam born? Can you say?**
R He was born before liberation.

I **In which year? Was he born before the Bangladeshi Liberation Movement?**
R Yes.

I **That means 1971. How old was he then?**
R He was 8 months old then.

I **That means he was born in the year 1970, isn't it?**
R Yes.

I **In which month?**
R In the month of Baisak.

The final category specified in table 10, 'other', consists of methods such as the use of physiological bench-marks (ie children were said to start losing their teeth at age 6 or 7, girls were assumed to attain puberty at about age 13, and so on), or written lists provided to the interviewer by the respondent or her husband. The following excerpt shows an instance where the respondent's husband apparently made out a list of the dates of birth of each child.

Transcript Number 171

[Household interview]

I **Now, will you tell their month and year of birth, OK? Matbar Ali . . .**
R I can't say the month and year of birth. I am an illiterate female. What can I do?

I **No, those I told you yesterday!**
R Oh! Yes, that was written here.

I **Where is that? Give it to me.**
R Take it. I kept it for you. Last night he had written it with difficulty.

I **Well, do you know that this is perfectly all right?**
R Yes, yes. Who should know better than him?

I **Everything has been written perfectly, isn't it?**
R Yes, everything is right.

I **Then, you can tell me one by one so that I can write.**
R How can I tell you? I cannot read!

I **Well, OK then. I shall write it down.**

[Individual interview]

I **Well, which month and year was he born?**
R All about the children, it was written on that paper.

I **Oh, well, OK. I can write it down from that paper.**

Throughout this pregnancy history, the respondent referred the interviewer back to the written list whenever a date of birth was requested.

Each of the methods reviewed here occasionally provided the principal means of dating pregnancies. The wide range of methods employed shows the extent to which interviewers moved beyond the fixed set of questions in the questionnaire.

We comment briefly here on the issue of whether ages were reported in completed years or years at nearest birthday. Chidambaram and Pullum (1981) demonstrate that the type of age reporting (completed or rounded years) affects the pattern of recent fertility estimated from the BFS, and they argue that the estimated trends under the assumption of rounded years are more plausible. Becker and Mahmud (forthcoming) also document a tendency of Bangladeshi respondents to overstate the age of children; this could be explained by a tendency to report in rounded rather than completed years. (The BFS interviewers were instructed to obtain age in completed years.)

Unfortunately, the transcript material does not enable us to give a conclusive judgement on this issue. For most of the pregnancies, an age (or years ago) was supplied with no indication about whether completed or rounded years were intended. We do think it is significant, however, that there are several instances where the respondent explicitly referred to rounded years in such a way as to acknowledge that completed years was the assumed standard. For example, in the excerpt from Transcript 145 in section 5.2, the respondent reports one child as 'two years completed, and now running three years', a style of reporting encountered frequently in the transcripts. In our view, the weight of the evidence from the transcripts is that respondents distinguished completed and rounded years for the most recent births and typically reported the completed years. But, because this is an issue of data validity, it is not easily pursued with the transcript material. (For relevant validity studies, see Becker and Mahmud, forthcoming and Bairagi *et al*, forthcoming.)

5.4 PROCEDURAL ISSUES: QUESTIONING ABOUT THE OPEN INTERVAL

In our reading of the transcripts we observed a tendency on the part of the interviewers not to probe thoroughly about pregnancies after the child assumed to be the youngest child, that is, pregnancies in what was taken to be the open pregnancy interval. This is a matter of special interest because the BFS data show relatively low levels of fertility and mortality in the period (one to three years) immediately preceding the survey. In the pregnancy history section, interviewers were to have asked, 'What was the name of your first/next baby born alive?' (Q313) after each live birth, followed by 'After [name] and before [name] was born did you have any other pregnancies?' (Q314). The following excerpt illustrates the correct procedure in the open interval.

Transcript Number 111

I [Q313] **Well, after Azizur Rahman was there any other live birth?**
R No.

I [Q314] **Any pregnancy after Azizur Rahman?**
R

I [Q325] **Did you ever breastfeed Azizur Rahman?**

Although the respondent did not reply audibly to Q314, it appears she had no other pregnancies after Azizur Rahman.

Table 11 is a cross-tabulation of respondents by whether Q313 and Q314 were asked or not asked. As the table shows, the correct questioning procedure was rarely followed: in only 5 per cent of the transcripts were both questions asked. In nearly a quarter of the cases (24 per cent) neither of the questions was asked. The following two excerpts are examples of the failure to ask either question.

Transcript Number 022

I **How old is Hasina Begum?**
R 2 years, 6 months.

I **Hasina is a daughter?**
R Yes.

Table 11 Percentage cross-tabulation of open interval questioning

	Q313: Any more births?		Marginal
	% asked	% not asked	per cent
Q314: Any more pregnancies?			
% asked	5	19	25
% not asked	51	24	75
Marginal per cent	56	44	100.0
Number of transcripts[a]	104	81	185

[a]Twenty-one women were not supposed to be asked these questions: those with no births (17), and those with a child less than 4 months old (4). The transcripts are either incomplete (5) or unclear (7) in the remaining 12 cases.

I **Alive?**
R Yes.

I **What is the name of your youngest child?**
R Hasina Begum.

I **Did you breastfeed Hasina Begum?**

Nothing was asked directly about the open interval. The question about which child was youngest was a necessary prerequisite for the breastfeeding questions which follow and does not substitute for an effort to confirm that there had been no live births or pregnancies since the birth of Hasina Begum.

The next example is somewhat more disconcerting as the interviewer used the household survey to identify the youngest child.

Transcript Number 070

I **Well, after Muzaffar and before Babul Akhter, did you have any other pregnancies?**
R No.

I **Your husband has told me that Babul Akhter was born in Chaitra 1380. He is a boy. Living. Did you give Babul Akhter breastfeeding?**

The interviewer asked no questions about the presumed open interval; she simply made a statement for the respondent to verify. No effort was made to ascertain whether there had been any pregnancies subsequent to Babul Akhter.[14]

It is not possible to determine from the transcripts whether omission of questions about the open interval led to under-reporting of recent live births or infant deaths, but quite possibly the effect was not large. To begin with, table 11 indicates that the question on additional births (Q313) was asked of a majority of the transcript respondents (56 per cent). It is the question on additional pregnancies (Q314) which was most often omitted (75 per cent of respondents), as in the following case.

Transcript Number 060

I **After Jabedul, there are no children, isn't it?**
R No.

I **Did you breastfeed Jabedul?**

Data from a number of WFS surveys indicate that inquiry about non-live birth pregnancies uncovers virtually no additional live births (Chidambaram *et al* 1980), and hence the omission of Q314 in all likelihood did not damage the reporting of recent fertility and infant mortality. Other evidence from WFS surveys shows that few additional live births are recorded in the pregnancy history data of the individual survey beyond those reported in the household survey, even when the two surveys are more detached than in the BFS (Chidambaram *et al.* 1980). Nevertheless, because the BFS household survey contained no inquiry on parity (children ever born), the interviewer need not have been aware of children who were born and died in the 'open interval', and thus not asking Q313 increases the probability of such live births being unreported.

5.5 SUMMARY

We have considered the pregnancy history section at greater length and in more detail than other sections of the questionnaire. We have done so because information gathered in this section is the basis for estimates of fertility levels and trends, a principal objective of the BFS, and because it presents unique difficulties for the respondent and interviewer alike.

Our analysis revealed the following.

1 Interviewers failed to ask for the calendar date (month and year) of the termination of the majority of reported pregnancies.
2 Calendar date was more likely to be asked of first pregnancies, more recent pregnancies, and in interviews conducted early in the BFS field period.
3 When asked, respondents were able to supply a calendar year of termination for roughly one-third of the pregnancies, a calendar month for roughly one-half, and a 'years ago' (or current age of the child) in virtually all cases, with assistance from the interviewer; see (5).
4 Respondents were more likely to provide the calendar date of recent pregnancies.
5 'Years ago' was often calculated by the interviewers, on the basis of other information supplied by the respondents.
6 By far the most common method of calculation was to make use of the reported length of intervals between pregnancies. There is also evidence of interviewers drawing on information from the household survey, but this occurred relatively less often than the corresponding use of household survey data in determining the respondent's current age in the individual survey (see section 4).
7 Interviewers did not probe thoroughly for live births and pregnancies in the presumed open interval. The impact on the coverage of recent births and infant deaths is not clear.

We defer until section 8 of this report a discussion of the implications of our findings for survey design and for the quality of the BFS data.

[14] Interestingly, analysis of tape-recordings from Gambia (Gibril 1979) and from another survey in Bangladesh (Blacker 1977) reveals a similar tendency to take the youngest child present in the household as the last live birth.

6 Contraceptive Knowledge and Use

Obtaining valid national data on the knowledge and use of contraceptive methods was a major objective of the BFS, as this information was considered essential input for the evaluation of the family planning programme in Bangladesh. The contraceptive knowledge and use section of the BFS questionnaire was designed to ascertain, first, whether respondents were aware of methods of contraception and, secondly, whether they had ever used or were currently using a method of contraception. Respondents were first asked if they knew any methods for preventing births, and, if so, the name of the method. Following this question, respondents were read a list of ten methods (omitting any already mentioned by the respondent) and were asked, for each one separately, whether they knew of the method.[15] For any method which the respondent recognized (either spontaneously or with the method-specific probes), the interviewer asked whether the respondent had ever used the method. At the end of the section, respondents were also asked whether they were currently using a method of contraception and, if so, which one.

We address here several questions about the success of the interviewing in this section: Did the respondents understand the questions about contraceptive methods? Were the respondents (or interviewers) embarrassed by these questions? Are there any clues why the levels of ever-use and current use are so low relative to the level of knowledge of contraceptive methods?

In our reading of the transcripts, we were impressed with how smoothly this section of the interview proceeded. Typically the section began with a brief interchange over the first question: 'Now I want to talk about a somewhat different topic. As you may know, there are various ways that a couple can delay the next pregnancy or avoid having a baby. Do you know of, or have you heard of, any medicine or ways to do this?' (Q401). But when the interviewer proceeded beyond this question to the method-by-method inquiry (describing the method, and asking whether the respondent had heard of the method and used it), the discussion died away and the interchanges became very terse. For all methods except the oral pill (the first asked about), the interviewer used more than one statement (that is, something beyond the required description) in less than ten per cent of the transcripts. In the overwhelming proportion of cases, then, the interviewers did not probe the respondent beyond her first reply, nor did respondents ask for further explanation. In fact, there are some instances where the interviewers cut the respondent off short, hurriedly moving on to the next question, something which almost never occurred in other sections of the interview. The respondents, for their part, almost always offered the briefest of replies and seldom asked for clarification of the question.

Why did this section go so smoothly?

6.1 DID THE RESPONDENT UNDERSTAND THE QUESTIONS?

Because of the absence of discussion, there is little basis on which to judge, from the transcript material alone, whether the contraceptive knowledge and use questions were understood.

There is evidence of respondents confusing the oral pill and the foam tablets mentioned as one of the 'other female scientific' methods. The terms are easily confused: in Bangladeshi, *bori* for tablet and *khaoar bori* for oral pill. Some interviewers, apparently aware of this possibility, probed respondents who spontaneously mentioned the oral pill to ascertain whether they were indeed referring to the oral pill or rather to foam tablets.

Transcript Number 068

I **Well, apart from this females can use other medicines for preventing births, such as foam tablet, jelly, cream, etc. Have you ever heard of these types of medicine?**
R Yes, I have heard of it.

I **Did you ever use all these?**
R No, I have used tablets only.

I **What tablet you have used? What type of tablet is it?**
R White.

I **What are the sizes? Is it large or small?**
R Small.

I **That means you are telling about oral pills?**
R Yes.

When interviewers did not guard against this confusion of methods, it is possible errors were left uncorrected.

Transcript Number 138

I **Now I shall talk on other topic. You may know that couples can delay or prevent their pregnancy if they wish. So you know any method or medicine like that?**
R Yes.

[15] The methods, in order of asking, were the oral pill, the IUD, other female scientific methods, the condom, rhythm, abstinence, withdrawal, douche, female sterilization, and male sterilization (vasectomy).

I **What do you know?**
R I don't know the name properly, but I am taking 'lyndiol'.

I **What type of medine is that?**
R Pill.

I **Do you know any other medicine?**
R Tablet which is distributed by Family Planning.

I **Do you know any other method other than tablet?**
R No.

. . .

I **Besides this, females can use other medicines also, such as foam tablet, jelly, cream, etc. Have you heard about these medicines?**
R Yes.

I **Have you ever used these?**
R I have taken pill as well as used cream also.

This interviewer did not confirm which 'pill' the respondent was referring to in the final statement cited, even though the discussion suggests she was not referring to the foam tablet. The possible confusion in this instance did not affect the data, however, because the respondent's use of 'cream' meant that she was correctly coded as knowing of a female scientific method. But these two excerpts, as well as others, suggest that the level of knowledge of other female scientific methods (which, in any case, was very low – ten per cent of the BFS respondents) may have been inflated due to confusion of the oral pill and foam tablets.

There is also evidence in the transcripts of difficulties with the initial knowledge question. Several respondents replied that they had heard of 'family planning', as if this were a specific method or medicine. Some respondents appear to have equated the terms 'family planning' and 'oral pill'. Furthermore, four respondents indicated that they had heard of 'planning' or 'family planning' but were unable to identify a single specific method from among the ten subsequently described to them. This seeming inconsistency could result from lack of knowledge of the methods described, incomprehension of the descriptions of the methods, or embarrassment at the descriptions of the methods. We turn to the last explanation below.

The transcripts do reveal under-reporting of knowledge of one method of contraception which was not the consequence of interviewer performance nor respondent confusion but of questionnaire design. 'Injection' was not included among the ten methods described to the respondent, intentionally so because it was not available through the government family planning programme at the time of the BFS. When injection was spontaneously mentioned by the respondent, this was recorded within the 'other method' category. Seven of the transcript respondents spontaneously mentioned injection, which exceeds the spontaneous mention of six of the ten methods listed in the questionnaire, as table 12 documents.

Since the method-specific probes elicited most of the reported knowledge of methods (with the exception of the oral pill), it is reasonable to surmise that knowledge of injection was under-estimated by the BFS. (Subsequently, the family planning programme has offered injection as a method, and more recent national surveys on contraceptive knowledge and use have included injection in method-specific inquiry.)

6.2 WERE RESPONDENTS OR INTERVIEWERS EMBARRASSED?

The almost complete absence of interviewer probes and respondent queries (such as, 'What do you mean?', or 'I don't follow you?') is striking, especially considering the apparently low level of knowledge of the contraceptive methods. One might expect occasional indications of curiosity or interest, but none appear.

It has been suggested that embarrassment may have contributed to an under-reporting of knowledge of douche and withdrawal (Ministry of Health and Population Control 1978: 77). The questioning about these methods elicited no remarks from the transcript respondents. In six transcripts, however, comments were made at other points in the contraceptive knowledge and use section which indicate embarrassment. In several, the interviewer assured the respondent that 'there was nothing to be ashamed of'; in others, the respondent said that she was ashamed or 'not supposed to know' about contraception. These remarks, coupled with our general impression that respondents and interviewers alike wished to pass through this section as quickly as possible, convince us that unease and embarrassment substantially affected the questioning and the responses on contraceptive knowledge.

6.3 REPORTING PAST AND CURRENT USE

On the reporting of contraceptive use, it is again as revealing to observe what was absent from the interview exchanges as what was present. The transcripts show very little discussion of the questions about use. Often, in fact, no respond-

Table 12 Knowledge of contraceptive methods: frequency of spontaneous mention and affirmative responses to probe, for the ten methods in the questionnaire and injection

Method	Spontaneous mention	Affirmative response to probe	Total knowing method
Oral pill	75	59	134
IUD	22	72	94
Condom	20	44	64
Female sterilization	12	97	109
Injection	7	not probed	7
Vasectomy	5	93	98
Female scientific methods	4	45	49
Rhythm	1	60	61
Douche	1	37	38
Abstinence	0	54	54
Withdrawal	0	47	47

ent replies are present in the transcript, apparently because they were inaudible or non-verbal, both of which suggest discomfort about the questioning. Frequently interviewers repeat the question, admonish the respondent to speak more loudly, or repeat the answer supplied by the respondent. In the following excerpt, for example, the respondent admitted to knowing several methods but became unresponsive when the questioning turned to use of the methods.

Transcript Number 131

I **Now, I will talk on another topic. You may know there are some couples who can prevent or delay their pregnancy if they wish. Do you know or have you heard anything like this?**
R No.

I **You have not heard, isn't it? Now I will read out some names. Tell me whether you have heard these or not. Have you heard about oral pill? By taking each pill on each day, females can prevent or delay pregnancy. Have you heard about this method?**
R Yes.

I **Have you ever taken pill?**
R No.

. . .

I **Condom or cap. It is a thing made of rubber.**
R Balloon.

I **Yes, it is like a balloon.**
R Yes, I have heard of it.

I **Has your husband ever used the condom?**
R No.

. . . [the respondent has also heard of rhythm, abstinence, female sterilization and vasectomy]

I **At present are you or your husband using any method or medicine for preventing pregnancy? Are you practising any method for delaying pregnancy?**
R

I **There is nothing to be ashamed of. Are you or your husband practising any method?**
R

I **Your husband is using condom, isn't it?**
R

I **How long is he using this? It has been how many months?**
R Say about two or three months.

This respondent showed much greater reluctance to report use than knowledge of the condom.

This interview and several similar interviews suggest that respondents found use more shameful to report than knowledge. We presume that the embarrassment about openly admitting use led to under-reporting, but naturally the extent of under-reporting for this reason cannot be assessed from the transcripts alone.

6.4 SUMMARY

The transcripts indicate that the contraceptive knowledge and use section of the interview was distinguished by a lack of discussion. While this may reflect efficient and successful questioning, there is evidence that in fact the items in this section caused considerable discomfort for both the interviewer and respondent. There is also evidence of respondent confusion about some of the questions, but this appears to have been a less severe problem than embarrassment. We find few faults in interviewer performance (eg question omission, incorrect wording of questions). The transcripts suggest that failure to include injection among the identified methods (because it was not provided by the government programme) led to an underestimate of the level of knowledge of this method at the time of the BFS.

7 Fertility Preferences

In this section, we examine two fertility preference questions which were asked, in one form or another, of all respondents in the BFS. The first concerns 'actual' fertility desires: did the respondent want to have any (more) children? Those women who replied affirmatively were asked an additional question on how many more children they wanted, and we consider this item as well. The second question concerns 'ideal' fertility desires: if the respondent could choose the number of children to have in her entire life, how many would that be?

The percentages shown in table 13 are the basis for some of the discussion which follows.

7.1 FERTILITY PREFERENCES: WANTS MORE? AND HOW MANY MORE?

Procedural Issues: Interviewer performance

There were several different wordings for the 'Do you want to have another child?' question in the BFS questionnaire, depending on whether or not the respondent had any live births, whether or not she was currently pregnant, and whether or not she was currently married and fecund. The transcripts show that these questions were rarely omitted by the interviewer and virtually always correctly worded. (In only three per cent of the 193 transcripts which contain this section was this question not asked by the interviewer.)

The wording of this item in the BFS questionnaire differs from the WFS standard by the inclusion of a time reference: 'Do you want to have another child *very soon*?' for currently married women who were fecund, not pregnant, and had one or more live births. (These women comprised a majority of the BFS respondents.) The time reference 'very soon' was added to the item by the BFS Technical Advisory Committee, after much discussion, in order to make its meaning more precise.

Transcript Number 125

I **Do you want a child very soon? It means do you want another child too soon? Do you want?**
R No.

The question is noteworthy for conveying immediacy in the timing of the additional child.

The transcripts suggest that fewer women would have replied 'no' if the phrase 'very soon' had not been included. In nearly seven per cent of the cases where the wording 'very soon' was used (119 of the transcripts), respondents gave a qualified reply which indicated they wanted another child at some time in the future but not very soon. These respondents were generally coded by interviewers as wanting no more children. The following excerpts are examples of these cases.

1 Transcript Number 008

I **Do you want a child very soon?**
R I don't want any other child until these children become grown up.

I **You don't want a child?**
R Yes, but not now.

Table 13 Fertility preference questions: percentage not asked, percentage receiving appropriate response, percentage with probes and with directive probes

	Preference question		
	Want more?	How many more?	Ideal size?
Question not asked	4	24	2
Appropriate response			
Of all cases (%)	87	61	77
Of cases where question asked (%)	91	80	78
Probe used (%), among cases where question asked	17	32	37
Directive probe (%), among cases where probe used	27	38	37
Total N[a]	181	54	180
N question asked	174	41	176
N probe used	30	13	65

[a]Excluded from the analysis are transcripts which do not contain the questioning about fertility preferences or which are unclear in the preferences section. 'How many more?' is only asked of women responding affirmatively to 'Want more?'.

2 *Transcript Number 099*

I **Do you want a child very soon?**
R Let pass the three years, not very soon.

. . .

I (Q599) **How many children you will take in the whole of your life if it can be decided by yourself?**
R Four. One daughter and three sons.

In both of these cases, it is evident from the transcripts that the respondents wanted more children but did not want them 'very soon'. Respondent number 099 had only one child, a daughter, at the time of the survey. From her reply to the 'ideal family size' question (Q599), we may infer that she wanted more children. Yet she was recorded as not wanting another child. The number of respondents who felt similarly but made no comment to that effect cannot be ascertained, but it does seem that some women who reported wanting no more children would have replied differently if the words 'very soon' had not been included in this item. This certainly accounts in part for the surprisingly high percentage of low parity respondents in the BFS who are recorded as wanting no more children.[16]

Those women who did want more children (except those not currently married or infecund) were to be asked how many more they wanted. As table 13 indicates, this question was much more likely to have been omitted by the interviewer than either of the other two preference questions. The proper questioning is shown in the following excerpt.

Transcript Number 036

I **Do you want a child very soon?**
R Yes.

I **This time, what do you want? Son or daughter?**
R Son.

I **How many more children do you want?**
R One.

The next excerpt is typical of the 24 per cent of the cases where interviewers failed to follow the correct skip pattern and omitted the 'how many more?' item.

Transcript Number 058

I **Do you want a child very soon. Do you want one? Very soon?**
R Yes.

I **Think about the days before your last pregnancy. Did you want a child before this conception? Before this pregnancy, did you want another?**
R Yes.

The interviewer fails to follow the 'yes' response to 'Do you want a child very soon?' with the question 'How many more do you want?' We noted earlier that there is reason to doubt the validity of the transcripts' record of 'yes' and 'no' responses. Sometimes other evidence in the transcripts corroborates the validity of a 'yes' or 'no' response, however. In the above example, the respondent later said that she considered five children 'ideal'. Since she had only one child at the time of the survey, it seems likely that she did respond affirmatively to the 'wants more' question.

There was a moderately high percentage of non-numeric responses to the 'how many more' question, drawing additional probes by the interviewer in 32 per cent of the cases. Table 13 indicates that a large number of these probes were directive (38 per cent), such as in the following interview.

Transcript Number 207

I **How many more you want? How many more you want beside the one you are carrying?**
R One, two, whatever God gives.

I **Then two?**
R Yes.

Here the interviewer seizes on one of the numbers mentioned ('two') when there was no apparent basis for preferring it to 'one' or, for that matter, 'whatever God gives'.

Conceptual Issues: Respondent Understanding

Thirteen per cent of the respondents with no living children replied 'no' to the question, 'Do you want to have any [more] children?'. Those respondents with no live births were not asked whether they wanted a child 'very soon', and hence a constraint on the reference period does not explain the large number of 'no' responses.[17] In view of the central importance of childbearing in the lives of Bangladeshi women (see, for example, Cain *et al* 1979), the validity of this finding is difficult to accept. In the BFS First Report two possible explanations are suggested: 'The high figure raises the possibility that the question was misunderstood by younger women or, perhaps, that the interviewers failed to ask the questions correctly . . . the tape recorded interviews may provide further clues to interpretation . . .' (Ministry of Health and Population Control 1978: 87). The transcripts indicate that interviewers asked the question correctly. But did the respondents understand the question?

Of the twenty transcript women who had no living children, three (15 per cent) said they did not want any children. One transcript is incomplete, and hence we do not consider it here. Although this issue can hardly be settled on the basis of two cases, it is insightful to look briefly at each transcript.

One of the respondents may have misunderstood the question, as the following excerpt suggests.

[16] But this does not explain the puzzling responses of zero parity women, as they were presented a different wording of the item (see below).

[17] Of the respondents with no live births (among those with no living children), eleven per cent indicated no desire for any children.

Transcript Number 182

I **Do you want to have a child?**
R No.

. . .

I **(Q599) The number of children you want in your whole life if you could decide by your own, then how many you should have wanted?**
R Three.

The interviewer asked the question correctly, and the respondent gave a negative response. However, the respondent proposes three as her 'ideal' number of children. While these two responses were not necessarily in contradiction (her 'ideal' may well have differed from what she considered realistic), the discrepancy between the two suggests that she misunderstood one or the other of these questions.

This is clearly not the case with the other respondent, who was currently pregnant at the time of the survey.

Transcript Number 136

I **(Q548) The baby which you are expecting, apart from that do you want any more children? Do you want any more children apart from the baby which you are expecting?**
R No.

I **(Q550) Before you conceived this child, did you want any more children? Again I am reading the question. Before you conceived this child, did you want any more children? Speak loudly.**
R

I **Speak loudly, otherwise I cannot hear you.**

. . .

I **(Q599) The number of children which you want in the whole of your life, if it is decided by your choice, then how many you will want? The children which you want in the whole of your life?**
R Not a single child.

I **Not even one? Again I am reading the question. I think you could not understand the question. I am trying to make you understand. The number of children which you want in the whole of your life, if it is decided by your choice, then how many you will take?**
R One.

I **One.**

Three features of this exchange deserve mention. First, the interviewer asked Q548 ('Do you want more children?') correctly. Secondly, there is no doubt that the respondent meant to say that she wanted no children. Finally, the interview did not proceed smoothly: the interviewer many times asked the respondent to speak up, repeated questions, and prodded the respondent into answering. These interviewing difficulties distinguish this interview from the majority of BFS interviews, judging from the transcripts.

Overall, respondents appear to have comprehended the 'Do you want another child?' item, as evidenced by the high percentage of cases which required no probe (see table 13) and as illustrated by the second excerpt above. Table 13 also shows that this question received the highest proportion of 'appropriate' responses of the three preference items. The majority of the inappropriate answers include reference to the respondents' belief that only God could control such matters. (A few women indicated that they were undecided about whether they wanted a future birth or not.)

Respondents who wanted more children did not seem to have been confused by the further question on how many more they wanted. They were, however, very likely to provide a non-numeric response. The ratio of 'appropriate' to 'inappropriate' responses on this question resembles the ratio for Q599 ('ideal' family). (Discussion of this question follows in section 7.2.) It seems that respondents were more likely to supply an appropriate response to a question requiring a 'yes' or 'no' than to a question which required specifying a number. In the following excerpt, the respondent easily handles the 'want more?' item but was initially unable to reply to the 'how many more?' question.

Transcript Number 135

I **Do you want a child?**
R Yes.

I **Well, what do you want this time? Son or daughter?**
R Daughter.

I **How many children do you want? How many more children do you want?**
R

I **You have four sons, how many more children do you want?**
R

I **How many children would you like to have?**
R Me?

I Yes.
R It is up to God.

I **Of course it is up to God. Still how many children do you want, tell me that. How many do you expect?**
R I want a daughter.

Interpreting the response 'it is up to God' has long bedevilled analysts of fertility preference data. As this is also a common response to Q599 ('ideal' family size), we defer discussion of its meaning to section 7.2.

7.2 IDEAL FAMILY SIZE

Procedural Issues: Interviewer Performance

All respondents were asked (Q599), 'If you could choose exactly the number of children to have in your whole life,

how many children would that be?' The transcripts show that interviewers seldom deviated from the correct wording. This question was also seldom omitted by the interviewer: in only 2 per cent of the transcripts did the interviewer neglect to ask the question (table 13).

The question was not easily handled by respondents, however, which caused problems for interviewers. Probes were used in 34 per cent of the cases, yet 22 per cent of the respondents were still unable to supply a numeric response. It is also noteworthy that 37 per cent of the probes were directive. According to the BFS Interviewer's Manual, interviewers were to elicit a numeric response by allowing the respondent to interpret the question as she saw fit, 'but you yourself must not suggest anything' (Bangladesh Fertility Survey 1975: 58). This was not always an easy task. The following excerpt shows an interviewer finally suggesting a number (ie using a directive probe) after two other non-directive probes failed.

Transcript Number 009

I **The number of children which you want in the whole of your life, if it is decided by yourself, how many you will take?**
R Children?

I **The children which you want in the whole of your life.**
R How many in my whole life? Is it fair to have wanting children? It should need proper providence.

I **That I am talking about. How many you want?**
R How many? Those children which I have, if they stay alive, I don't want any more. What I hope for I got. My hope is fulfilled.

I **That means you want only those four?**
R Yes, four.

Another style of directive probing is illustrated by the next interview, in which the interviewer did not suggest a number but did direct the respondent's thinking along certain lines.

Transcript Number 147

I **The number of children which you want in the whole of your life, if it can be decided by yourself, then how many children will you have?**
R If I can't say before.

I **Will you prefer to have what you already have or do you want more than that?**
R I want what I have.

I **How many will you have?**
R Seven.

The interviewer frames the question in such a way that the respondent is encouraged to choose a number equal to or greater than the number of children she already has. Since this respondent happened to indicate that she did not want her last pregnancy, with more neutral probing she might have chosen a desired family size of less than seven.

Directive probes can have an especially profound effect on the responses to attitudinal items. Furthermore, as we indicate below, respondents did not easily grasp the concept of an 'ideal family size'. Thus the directive probes and suggestions of the interviewers may well have had an impact on the responses to this item.

Conceptual Issues: Respondent Understanding

The First Report states that, 'One of the problems in interpreting data on stated preferences about family size is that they are influenced by the existing number of children born to respondents . . . It is not possible to say to what extent women would hold these similar views if they could start their families again' (Ministry of Health and Population Control 1978: 86). It is usually assumed that women are reluctant to imply they do not want all of their children. The transcripts give a slightly different picture, however. They reveal, for example, little hesitation by many respondents to admit that their last pregnancy was unwanted. We also sense that many would not have hesitated to choose an ideal family size smaller than their actual size.

What the transcripts suggest, instead, is that many respondents had difficulty comprehending the question posed to them. The notion of selecting an 'ideal' family size – ideal from the detached perspective of 'the whole of your life' – was not easily conveyed to the respondents. Indeed, this item was among the most difficult to translate into Bangladeshi from English, because its abstractness is difficult to express in colloquial Bangladeshi phrases.

The difficulties in comprehending the intent of this item are reflected in the responses revealed by the transcripts. For example, respondents sometimes answered by saying that they did not want any *more* children than they already had.

1 Transcript Number 118

I **The number of children which you want in the whole of your life, if it can be decided by yourself, then how many children will you have?**
R I don't need any more.

I **You don't need any more? Then you will like to have three children? In your whole life, how many children you will have if it can be of your choice? Tell me, three, four, five? How many would you prefer?**
R Three.

2 Transcript Number 152

I **The number of children which you want in the whole of your life, if it is decided by yourself, then how many children you will have?**
R I do not want any more children.

I **Then, you prefer these three, isn't it?**
R Yes.

Both of these respondents answered the question from the context of their fertility experience to date, rather than from a more abstract perspective on 'the whole of your life'. Neither interviewer directed the respondents to think in there terms. But in both instances, the interviewer as well as the respondent assumed that responding in terms of current parity was appropriate.

Another common response provides further insight into the interpretation of this question by respondents. Many women responded in terms of a particular sex balance rather than a total number of children.

1 Transcript Number 144

I **The number of children which you want in the whole of your life, if it is decided by yourself, how many will you have?**

R I will take one son and one daughter. Now I have two daughters, so I will take another chance for a boy.

2 Transcript Number 052

I **If you could determine at your will the number of children you want in your life, then how many will you have? Not considering those children you have, suppose you have no children, then how many would you want?**

R First tell me – boy or girl? Two boys, one girl are enough.

I **Then three?**

To these respondents, the 'ideal' childbearing experience is characterized by a particular sex composition as well as a particular number of children.

Table 13 shows that the question on 'ideal' size was the most likely of the three preference questions to yield an inappropriate (ie non-numeric) response. Virtually all of these were instances of the respondent stating a belief that only Allah can have control over such matters. The following example is typical.

Transcript Number 164

I **Well, the number of children which you want in the whole of your life, if it can be decided by yourself, then how many children will you have?**

R That is up to God. He has given me five. He might have given me another five. It can't be prevented by taking medicine.

For this respondent and others, family size is not to be determined by their desires or behaviour. It follows, for some of these women at least, that it is not sensible to entertain the question of what constitutes an ideal family size. For these women, the response 'that is up to God' is a legitimate response, not a non-response. Indeed, these responses may reveal more about fertility behaviour than numeric responses which have little salience, or so the transcripts suggest. Some respondents, on the other hand, no doubt could have provided a valid numeric response but refrained from doing so, with the view that stating a number would violate religious norms. Hence the reply 'up to God' may well have represented an evasion by some respondents, but for many, this appears to be a genuine response. (Pool and Pool (1971) arrive at a similar conclusion from their analysis of tape-recorded interviews in Niger.)

To sum up, the transcripts reveal three types of response to this item which were, strictly speaking, inappropriate. Some respondents understood the question to be asking whether they wanted more children and thus replied with reference to their current family sizes. Some respondents replied in terms of a particular sex composition, rather than a total number of children. A final group of respondents found the question unanswerable, since such matters are for Allah alone to consider. Only the inappropriate responses of the final group are recorded in the BFS data (in a category for 'non-numeric responses'). The transcripts indicate that numeric responses were obtained for most women in the other two groups, but clearly significant features of their responses were lost.

7.3 SUMMARY

The item 'Do you want another child?', or 'Do you want any children?', was correctly asked by interviewers, and there is little evidence of misunderstanding of the question on the part of respondents. The transcripts support the view that the inclusion of the words 'very soon' heavily influenced the responses. The question, 'How many more children do you want?' proved more difficult for respondents to answer, for reasons analogous to the difficulties the 'ideal family size' question presented. In both cases, the Bangladeshi women resisted supplying numeric responses. The ideal family size question, furthermore, seemed especially subject to differing interpretations; some respondents, indeed, found the notion of an ideal family size difficult to grasp or accept. In the interchanges about the two preference items for which numeric responses are sought ('How many more?', and the ideal size item), roughly one-third of the probes employed by interviewers were directive, a reflection of the effort required to obtain numeric responses.

8 Implications of the Findings

8.1 THE BFS DATA

In section 2.2 of this report, we referred to several puzzling findings from the BFS which motivated the study of the tape-recorded interviews, and we reconsider here those findings in light of our analysis.

The transcript material makes vividly clear the lack of knowledge of dates and ages in Bangladesh. There is little reason to believe that different interviewing techniques would have yielded more precise data on dates of events or ages. The transcripts suggest, however, that had the questionnaire been designed to allow for the recording of calendar months and years ago when calendar years were not supplied, more precise dating of recent pregnancy terminations would have been possible. In general, the transcripts indicate that the lack of calendar date information in the BFS data is a valid reflection of ignorance about dates of events and ages.

The analyst of BFS data should be aware of three features of the collection of data on dates and ages which the transcripts reveal. First, the interviewers drew heavily on the BFS household survey when determining a current age for the respondent and her children in the individual survey. (We feel this was largely unavoidable, given the design of the BFS; see section 8.2.) Hence errors in the reporting of ages in the household survey might be reproduced in the individual survey. Secondly, the efforts to date the respondent's birth, her marriage, and the births of her children were closely linked. Thus for many respondents it is erroneous to assume independence among the three during the data collection. Thirdly, the interviewers often dated births in the pregnancy history by using the interval from the previous or subsequent birth. This procedure may have introduced systematic errors in the dating of births which influence the historical trends shown in the BFS data.

The suspiciously low levels of fertility and infant mortality shown for the five years immediately preceding the BFS may be, in part, the consequence of interviewers' failure to probe thoroughly for unreported births (and subsequent infant deaths) in this period. The transcripts show a lack of probing about what is presumed to be the open interval. In our view, it is unlikely that this lack of probing has much consequence for the estimation of fertility, but estimates of infant mortality may well be affected, as infants who had died would seem most likely to be omitted.

The transcripts are particularly instructive about the BFS data on contraceptive knowledge and use. First of all, it appears that both interviewers and respondents were uncomfortable during this section, which might have contributed to an under-reporting of knowledge and use. Secondly, the transcripts suggest that omission of injection from the list of methods inquired about probably led to an underestimation of knowledge of it. Thirdly, there are indications of respondent confusion about the various methods, in particular a tendency to confuse 'oral pill' and 'foam tablet'.

Finally, our analysis of the sections of the interview on fertility preferences confirms the general view that several of these items were not successful. We find evidence of the respondent's difficulty in supplying numeric responses to questions about family size desires. It seems, indeed, that the BFS data may contain a misleadingly high proportion of numeric responses, as many respondents supplied them only after considerable coaxing by interviewers. Respondents had least difficulty with the 'Do you want another child very soon?' question, and, despite doubts raised about the BFS data for this item, we find little basis for rejecting its overall validity. The data on family size desires are of much more questionable validity. The transcripts reveal that some of the respondents' most clearly defined preferences – for example, the desire for a specific sex composition, or the view that family size is not something for a couple to determine – were not captured by the preference items included in the BFS.

8.2 THE DESIGN AND FIELDING OF SURVEYS

Several concrete suggestions for improvement of surveys emerge from our analysis, as well as several unresolved questions.

Our suggestions are as follows.

1 Record calendar months of events whether calendar year is reported or not.
2 Since the recent period is typically of greatest interest, design the survey instrument and instruct interviewers so as to ensure intensive probing about events in this period. This may imply, among other things, a 'backwards' questioning in the pregnancy history (most recent to first pregnancy) rather than the 'forwards' questioning standard in WFS surveys. (However, the evidence presented in Becker and Mahmud (forthcoming) suggests that use of 'backwards' rather than 'forwards' questioning has minimal impact on reporting for the recent period.)
3 The fertility preference items which request numeric responses about family size desires need to be re-assessed. More latitude in the responses accepted or expansion of the set of items should be considered.
4 Conducting a brief household survey interview and a detailed individual survey interview during the same visit to a household will inevitably lead to some contamination of one by the other. If independence of the two is sought (the avowed standard in the BFS and most WFS surveys), it must be enforced through the design of the fieldwork. (This often makes for a less cost-efficient survey design, however, and possesses other disadvantages as well. See Scott and Singh 1982.) A wiser approach might be to take the lack of independence of the two as

inevitable and turn efforts towards maintaining high standards of data collection in the household survey. (The quality of the BFS household survey data, for example, compares favourably with the data from other recent censuses and surveys. See Committee on Population and Demography 1981.)

5 Interviewer behaviour changes markedly over the field period when it extends for several months. Although the overall effect on data quality is unclear, the matter surely merits further research and the awareness of those involved in the conduct of surveys.

The unresolved questions raised by our analysis of the transcripts concern the role of interviewers. Perhaps the single strongest impression conveyed by the transcripts is the tremendous influence of the interviewer on the content of the information obtained. This fact is well recognized but is rarely documented with evidence from demographic surveys in developing societies.[18] Accepting that in a setting such as Bangladesh the interviewer will assume a key role in determining the content of the data collected, what type of influence should be regarded as desirable?

BFS interviewers were instructed to follow the questionnaire as closely as possible, limiting probes to repetition of the questionnaire item or neutral statements. This seems a sound rule for attitudinal items, for example, fertility preferences, where our analysis suggests that directive probing is both tempting and harmful. But allegiance to the same rule when inquiring about dates and ages would, without doubt, result in a considerable loss of information, much of which may be of acceptable quality. The interviewers in the BFS were active participants in the determination of dates and ages. In our view, it is hazardous to draw firm conclusions about their impact on the quality of data. The transcripts do suggest that occasionally interviewers, in sheer frustration over their difficulties, adopted strategies which may well have yielded less than optimal information. Without some efforts on their part, however, often the interviews could not have proceeded. Their informal strategies were, at times, indispensable if data on dates and ages were to be obtained.

Our analysis suggests that in settings such as Bangladesh interviewers must adopt flexible strategies for gathering some of the data of central importance in demographic surveys. We recommend, first, that interviewers should be informed explicitly where freedom of questioning is allowed and where strict allegiance to the questionnaire is essential. Secondly, interviewers should be trained to obtain dates and ages by indirect means, with due attention given to warnings about procedures which may introduce systematic bias. Implicit in these two recommendations is the view that interviewer training and supervision deserve as large a fraction of the survey resources as feasible. This is entirely defensible, given the interviewers' central role in the data collection.

[18] Becker and Mahmud (forthcoming) report differentials among interviewers in the accuracy of the pregnancy history data collected in their validation study in Bangladesh. Byerlee and Terera (1981) demonstrate that 'enumerator quality' is a powerful determinant of reliability in the reporting of ages in Sierra Leone.

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Appendix A – Matching the Transcript Respondents to Cases in the BFS Standard Recode File

In order to compare the transcript material with the raw questionnaire and with data in the Standard Recode file of the BFS, each transcript must be assigned the identification code of the corresponding questionnaire and Standard Recode file case. On the questionnaire and in the Standard Recode file, each respondent is identified by a six-digit code consisting of a 'Converted Household ID' (four digits) and the line number of the respondent in the household listing of the household survey (two digits). This six-digit ID is not provided on the transcripts, because it was assigned after completion of the interview at the office editing stage. Instead, the transcripts are identified by combinations of the sample frame information used during the fieldwork: census code of the interview location; the name of the district, *thana*, and village of the location; the household number; and the interviewer number. On some transcripts all of these are provided; on some a subset of these are provided; on a few transcripts no identifying information is provided. The identification information which is provided was taken from the outside cover of the cassette tapes.

On some transcripts this information appears to be incorrect: the questionnaires with the same identifying information do not correspond to the transcripts. This occurs for two reasons: more than one interview was occasionally recorded on the same tape, and the same tape was sometimes used more than once.

Hence, to match the transcripts with questionnaires (and thus Standard Recode file cases), we adopted a conservative (and tedious) approach. During the BFS fieldwork, the questionnaires for tape-recorded interviews were marked 'tape-recorded' on their covers and set apart from the main body of the BFS questionnaires. We matched these with transcripts by scanning the questionnaires for ones which corresponded, in the recorded information, with the transcript. We relied most often on information on ages (or dates) in the household listing of the household survey, the respondent's current age (or date of birth) and age at marriage(s), and ages of children in the pregnancy history. We also made use of the names of household members recorded in the household listing. Usually we allowed for less than perfect correspondence: virtually always the transcript and the questionnaire (or Standard Recode file respondent) differed in some respects, even when there was little doubt about the correctness of the match.

Through this tedious procedure we were able to match 190 of the 218 transcripts containing individual survey interviews with a case in the Standard Recode file. Note that in this analysis we do not examine explicitly the consistency among the three sources (transcripts, questionnaires, Standard Recode file). Hence errors in matching affect only the classification of transcript women by characteristics (current age, place of residence, region, years of schooling, region, co-operativeness rating) which occasionally enter the analysis (eg tables 2, 4, 7, 9).

The difficulty in matching the transcripts to the other data sources could only have been avoided had the same identification information been employed from the beginning to the end of the survey, but various considerations made this impractical and inconvenient. Matching problems are often encountered in studies of this type (Krotki 1974).

Appendix B – Tables Comparing the Transcript Respondents with the Full BFS Sample

Table B1 Characteristics of the full BFS sample and the transcript sample: place of residence

	BFS	Transcripts
Region		
Rajshahi	22.4%	18.9%
Khulna	21.1	29.5
Dacca	30.5	31.1
Chittagong	26.0	20.5
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Type of place		
Rural	77.1%	68.9%
Urban	22.9	31.1
Total	100.0%	100.0%
N	6513	190

Table B2 Characteristics of the full BFS sample and the transcript sample: demographic characteristics and fertility-related variables

	BFS	Transcripts
A Demographic characteristics		
Age		
<20	22.3%	21.6%
20–24	21.0	20.5
25–29	17.0	22.6
30–34	12.4	14.2
35–39	10.3	10.5
40–44	9.6	7.9
45–49	7.4	2.6
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Marital status		
Married	88.3%	92.1%
Widowed	8.0	6.3
Divorced	2.0	0.5
Separated	1.8	1.1
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Number of live births		
0	14.0%	8.4%
1	13.3	16.3
2	12.2	14.2
3	10.6	9.5
4	10.1	12.1
5	9.5	10.5
6	8.6	9.5
7	7.3	10.5
8+	14.6	8.9
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
B Fertility-related variables		
Last pregnancy		
Wanted	29.6%	21.6%
Not wanted	35.3	46.3
Undecided	22.6	24.7
Inapp. or not stated	12.5	7.4
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Ideal family size[a]		
0–1	1.2%	1.1%
	(1.8%)	(1.4%)
2	9.4	11.1
	(13.8)	(14.5)
3	17.1	23.2
	(25.1)	(30.3)
4	22.1	25.3
	(32.4)	(33.1)
5+	18.4	15.8
	(26.9)	(20.7)
Non-numeric or not stated	31.7	23.7
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Ever-use of contraception		
Never used	84.5%	71.6%
Used inefficient	6.1	11.1
Used efficient	9.3	17.4
Total	100.0%	100.0%
N	6513	190

[a]Shown in parentheses are the distributions excluding women in the 'non-numeric or not stated' category.

Table B3 Characteristics of the full BFS sample and the transcript sample: socio-economic characteristics

	BFS	Transcripts
Ethnicity		
Muslim	83.3%	78.4%
Hindu	15.6	20.5
Other and not stated	1.1	1.1
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Education		
None	74.8%	65.8%
1–5 yrs	18.7	22.6
6–10 yrs	5.3	10.0
11+ years	0.9	1.6
Not stated	0.3	–
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Husband's status[a]		
No land	13.3	9.5%
	(26.0)	(22.8%)
Owns land	37.8	32.1
	(74.0)	(77.2)
Non-agricultural	48.6	57.9
Not stated	0.3	0.5
Total	100.0%	100.0%
N	6513	190

[a]Shown in parentheses are the distributions limited to women whose husbands work in agriculture.

Table B4 Characteristics of the full BFS sample and the transcript sample: interview characteristics

	BFS	Transcripts
Reliability of birth history		
Poor	50.1%	51.1%
Fair	47.4	45.3
Good	2.1	2.1
Not stated	0.4	1.6
Total	100.0%	100.0%
N	6513	190
Length of interview		
<30 mins	3.3%	0.5%
30–39	10.9	2.1
40–49	19.4	10.4
50–59	18.6	15.3
60–69	25.9	35.0
70–79	8.7	14.2
80+	10.4	22.4
Missing	2.9	3.7
Total	100.0%	100.0%
N	6513	190
Mean	55.5	65.6
Range	5–98	25–98

	BFS	Transcripts
Co-operativeness of respondent		
Bad	3.6%	2.1%
Fair	41.9	41.1
Good	43.2	41.6
Mostly very good	5.3	8.4
All very good	4.6	6.8
Not stated	1.4	–
Total	100.0%	100.0%
N	6513	190
Weight		
Measured	46.0%	56.8%
Not measured	54.0	43.2
Total	100.0%	100.0%
N	6513	190

	BFS	Transcripts
Others present during union history		
No one	45.7%	42.1%
Child under age 10	18.6	20.5
Other females	18.5	11.6
Other females and child under 10	10.9	14.2
Other	6.3	11.6
Total	100.0%	100.0%
N	6513	190
Height		
Measured	43.3%	53.2%
Not measured	56.7	46.8
Total	100.0%	100.0%
N	6513	190

Appendix C – Excerpts from Transcript 104

A. Respondent's age in the household survey

I **What is your age?**
R 25/30 years.

I **Is it right if you guess?**
R I got married at the age of 14.

I **Well, sister, how long ago did you get married?**
R Almost fifteen/sixteen years.

I **No, listen, don't answer it in two. You have to answer one. Listen, I have one block. Listen to me, I will take one answer which is correct. Taking one information means taking the true information. That's why you have to answer one. If you say 14, 13, 26, that I will not take.**
R I got married at the age of 14.

I **Let me finish my word. You got married at the age of 14. Then how many years after your marriage your eldest child was born?**
Other Two children were born just after the marriage but died.

I **How many years after?**
Other Married in one Jaista and the next Jaista gave birth one child and her child was born after that Jaista.

I **Don't say that, say one year after.**
R Babul was born three years after.

I **I am not talking about that, tell me about the eldest child who died.**
R That was one year.

I **How old is Babul now?**
R Babul is running 12 years.

I **12 years? If Babul is born three years after the marriage, then 15 years. Adding 14 and 15 years, how many years? Is it 16? Which is written in the kabinnam** [marriage certificate]?
Other It should be written 16.

I **Written?**
Other It cannot be written 16 years, in the marriage certificate. Below age 18, marriage is prohibited for girls.

I **Well, remember please, what your parents said. How old were you then?**
R No, we have a paper. All of our ages are written on it.

I **Well, that's good! We want that.**
R According to that paper, my father found out that I got married at the age of 14.

I **Well, what your father said, that is right. Leave your marriage at 14. Three years after your marriage you gave birth to your eldest son. You have said the age of this child is 13.**
R No, 12 years.

I **This eldest son who is alive, how old is he?**
R Running 12.

I **12 years and 3. That means 15 years. 15 and 14, 29 years.**

B. Respondent's age in the individual survey

I **In which month and year were you born?**
R That I can't say.

I **How old are you?**
R 30.

I **I have written it 29. Is it right, 29?**
R Yes, right.

I **You got married at the age of 14, and it is running seventeen years of your marriage. 14 and 17. How old is your son? Eldest son?**
R 12 years.

I **After three years, your first son was born?**
R Yes.

I **Were there any children before that?**
R There were a few miscarriages.

I **No, was he born three years after your marriage?**
R Yes.

I **You have said he is 13 years old?**
R No, 12 years.

I **From 12 to 15 and 14, that makes 29 years. Then you are 29 years old.**

C. Respondent's age at marriage

I **In which year and month did you get married?**
R Say seventeen years before.

I **Which year was that? Well, you can't say that, isn't it?**
R No.

I How old were you then?
R 14 years.

D. Entire pregnancy history section

I I want to know some things about how many times you have been pregnant in the whole of your life. Did you ever give birth to any children?
R Yes.

I Was there any child of yours who died just after the birth or died after living a few days?
R Yes. One died just after the birth, another seven months, eight months pregnancy.

I Died after the birth, isn't it?
R Yes.

I Was it a still birth?
R No, live birth.

I Was there any dead child in your pregnancy or any miscarriage or abortion?
R No, two brothers were born, those were live births.

I That means, I want to know, was there any pregnancy which lasted for a few weeks or a few months?
R No.

I [to her mother-in-law] Please, you go!
Mother-in-law If I don't go! She is my daughter-in-law.

I Sometimes it brings difficulty if you stay in front of her!
Mother-in-law No, there will be no difficulty.

I No, there is difficulty. Sometimes due to shyness somebody cannot say many things in front of others. [to respondent] Are you pregnant now?
R No.

I Now I will ask you a few questions about each of your pregnancies, such as each child, each dead child, any miscarriage or abortion. Tell me about those children of yours who are dead or who are living far away from you.
What is the name of your first child?
R Babul.

I Is he the oldest?
R I didn't say first child's name. He died just after the birth. What name should I give him?

I Was there any pregnancy after your marriage and before the birth of that child?
R No.

I After your marriage and before the birth of this child was there any child?
R No, no.

I How many years before he was born? How many years before the birth of Babul?
R I got married in the month of Jaista, and after the next Jaista I gave birth to a daughter.

I So, one year after.
R Yes. One year after. After the birth of that daughter, again another daughter was born.

I How many years have you been married?
R Sixteen or seventeen years.

I You are married for seventeen years?
R Yes, sixteen or seventeen years.

I Seventeen years! 14 and 17 makes 31 years. Then you are 31 years old. You are married for seventeen years. How many years after your marriage did you give birth to this child?
R The first one?

I Yes.
R One year.

I One year? Then sixteen years ago. Was it a son or daughter?
R Daughter.

I Is she alive now?
R No.

I How long was she alive?
R One hour, two hours.

I Two hours, OK. What is the name of the next child?
R That child also died, I didn't give it any name.

I Was it a live birth?
R Yes.

I You didn't give her any name, isn't it?
R No.

I Well, after the birth of that child and before the next, was there any pregnancy?
R No.

I Was there any pregnancy between them?
R No, there was no pregnancy. This eldest son was after the death of those children.

I How many years after this child was he born?
R Say two years.

I Say it properly.
R One daughter, after two years.

I From 16 deduct 2. It will be 14. Was it a son or a daughter?
R Daughter.

I Is she alive?
R No.

I How long was she alive?
R One day.

I **Well, what is the name of the next child?**
R His name is Babul.

I **After this child and before the birth of Babul, was there any pregnancy?**
R No.

I **How old is Babul?**
R 12.

I **He is a boy. Alive?**
R Yes.

I **What is the name of the child who is after Babul?**
R Bacchu.

I **After Babul and before Bacchu, was there any pregnancy?**
R No.

I **How old is Bacchu?**
R 9 years.

I **Son. Is he alive?**
R

I **What is the name of the child who is after this child?**
R Bipul.

I **After Bacchu and before the birth of Bipul, was there any pregnancy?**
R No.

I **How old is Bipul?**
R What have you written?

I **Earlier you have said 6 years. Whatever I have written before, I can ask you in different times to get the true answer. Because if you told it wrong earlier, next time it can be true. Understand?**
R Yes. Then write it 7. He is not started 8 yet.

I **Why should I write 8, if he is not 8? You are the mother, you have to tell the truth.**
R 7 years.

I **What is the name of the child who is after Bipul?**
R Atya.

I **After Bipul and before Atya, did you conceive?**
R No.

I **How old is Atya? How many years younger is she than Bipul?**
R Two years.

I **Two years younger? Then she is 4 years old. Son or daughter?**

R Son.

I **Is Atya a son?**
R No, daughter.

I **Daughter. Alive?**
R Yes.

I **What is the name of the child who is after Atya? I have written Atya's age as 5 earlier. Now you are saying here that she is 4!**
R Let it be there.

I **Why? Why should it be like that? Tell me the truth. If it is 4 I must write 4, if it is 5 I must write 5. If she was born during liberation, then she will be 6 years old. Don't you remember how many years gap there is between each of those children?**
R Two years, and two and half after.

I **Two and a half years after?**
R Yes.

I **So, according to that, here it will be 4 years and there it will be 5.**
R No, I was wrong.

I **You made a mistake there?**
R Yes.

I **What's the name of the child who is after Atya?**
R Akya.

I **After Atya and before Akya, was there any pregnancy?**
R

I **How old is Akya?**
R One year.

I **Is it a son or a daughter?**
R Daughter

I **Alive?**
R Yes.

I **Well, what's the name of the child who is after Akya?**
R Akya is after Atya. After this, no more.

I **No more?**
R No.