

CONDUCTING NON-TRADITIONAL DATA COLLECTION: TAKING VIDEOTAPED CHILD DEVELOPMENT INSTRUMENTS OUT OF THE LAB AND INTO THE FIELD

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I. INTRODUCTION

In survey research, the best way of conducting a survey is often not the most feasible way. For example, we know that some data are best collected in the field, but because of cost constraints they must be collected by telephone. We sometimes must compromise on how much a sample is to be clustered or how high a response rate can be targeted. As researchers seek to augment traditional methods of survey research with techniques that have been used in controlled settings on small samples, it is important to identify the compromises that may need to be made, the impacts such compromises have on the quality of the data, and the difficulties that are involved in taking lab techniques and applying them in field conditions.

The Interaction and Developmental Processes Study (IDP) tested the feasibility of administering in respondent's homes (instead of in the laboratory) a variety of child development assessments and tasks designed to measure the quality and type of interactions between mothers and children. Respondent confidentiality procedures had to be developed in a study where their faces and homes became part of the data. This project posed many design and data collection challenges. Appropriate measures had to be selected. Lay field interviewers had to be trained to go into homes with videotape equipment to administer a complex protocol. The activities of teams of interviewers had to be coordinated. Finally, a coding protocol had to be worked out for data that was going to be collected in chaotic situations; i.e., with more than one child present and demanding attention, relatives dropping in, radios playing, and poor lighting.

This paper discusses the research context of the project and describes how data collection challenges were met.

II. PURPOSE OF THE STUDY

Recently mothers earning low incomes have been seeking employment in increasing numbers, not only out of choice or economic necessity, but also because of welfare-to-work policies that mandate participation in employment-directed activities. Teenage mothers form an important part of this group, since the Family Support Act (FSA) has identified them as prime targets for participation in schooling and work activities.

Participation in work or educational activities by mothers requires that their preschool children spend a significant amount of time in nonmaternal child care, a requirement which may have important implications for mothers' and children's well-being. Recognizing that many low-income mothers have difficulty finding affordable, acceptable child care, policy in this area is moving toward extending financial assistance for care at the same time that new policies mandate work activities for welfare-dependent mothers.

To test the impacts of these trends in welfare and child care policy, Mathematica Policy Research, Inc., is conducting several field demonstrations of programs for populations of poor mothers and children. One of these, the Teenage Parent Demonstration (TPD), sets school and work requirements for welfare-dependent adolescent parents and provides child care subsidies and assistance in locating care for young mothers in the treatment sample.

Researchers' involved in TPD believe it is important to study the effects of employment activities and nonmaternal child care on the interaction of mothers and children and on the children's development. They recognized that traditional survey methodology could not adequately assess these areas. However, the more traditional psychological/developmental approach of bringing respondents into a laboratory setting would be problematic with a large multisite study of low-income mothers and children, many of whom would not be comfortable in such a setting.

We could not recommend the large scale application of nontraditional techniques embedded in a major study before we field tested the ability of a team of survey researchers and developmental psychologists to carry out this type of data collection. Since the ground-breaking Child Study of the National Longitudinal Survey of Labor Force Behavior-Youth Cohort (NLS-Y), researchers have acquired experience in conducting indepth measures in the field. Except for Dr. Brooks-Gunn's Baltimore study, there has been little opportunity to test intensive assessments of adult-child interactions and the study of children's behaviors under field conditions. The IDP study, which was funded by the Rockefeller Foundation and the Foundation for Child Development, was conducted from December 1992 to November 1993.

The target population was difficult to study. The group selected for the feasibility study, a cohort of

teenage mothers on public assistance, was subject to the welfare program's mandatory work/education requirements (JOBS) and had not finished high school before having their babies. All the women lived in Newark, NJ, or surrounding communities. The oldest children of these women, the children of interest to this study, were targeted to be between the ages of three and four and a half. To ensure that the feasibility study was a true test of the methodology, the sample was not creamed in any way.

During the study we interviewed 182 African American and seven Hispanic mother-child dyads. This response rate represented 70% of all sample members. We conducted a nonresponse analysis, comparing the outstanding cases vs. the completed interviewees on 31 variables. Only two were significant at the .05 level.

III. DATA COLLECTION-OVERVIEW

The total data collection picture for this study was complicated. We sent a team of two interviewers (a lead interviewer and a videotape operator) to respondents' homes. The interviewing averaged three and a half hours. The interviewers used a standard survey questionnaire, indepth assessments and videotaped mother-child dyads performing tasks designed to measure the quality of their interactions.

The survey questionnaire developed for this project contained sections on attitudes toward child-rearing, use of child care, child's health over the past three to four years, prenatal care received, social support network available to the mother, and basic socioeconomic information. The questionnaire took approximately 45 minutes to administer.

The indepth measures selected can be divided into two groups: those that required little or no modification for interviewer administration and those that required significant modification. Among the indepth measures that required little or no modification were the Peabody Picture Vocabulary Test-Revised (PPVT-R), the Motor Inhibition Test, and the Developmental Test of Visual-Motor Integration (VMI). The PPVT-R, a test of receptive vocabulary using picture prompts, could be administered to both the mother and child. Two tasks from the Motor Inhibition Test were also used: walking a line and drawing a line. The VMI assesses hand-eye coordination. Interviewers had children copy a series of line drawings ranging from very simple shapes like squares and circles to complex sets of circles and lines.

For the PPVT-R we used a format that incorporated the words into a standard questionnaire format. The interviewer recorded the number of the picture selected by respondents and coded whether it was right or wrong.

The published forms of the Motor Inhibition Test and VMI have few step-by-step instructions. To allow their administration by lay interviewers, we had to develop more detailed instructions. These tests, along with the child's PPVT were placed in a separate child's questionnaire and workbook.

Two indepth measures that required significant modification were the Home Observation for Measurement of the Environment (HOME) and the Preschool Inventory. The Preschool Inventory assesses a young child's school readiness. To reformat this instrument we combined the inventory item, the scoring sheet, and instructions into an interviewer-friendly document. For another project MPR had adapted the HOME for ages 0-3. For this study we adapted the HOME for ages 3-6. We turned an instrument that is mainly a checklist with backup documentation into a semi-structured interview. The new format contained places to code yes or no for each item and included suggested probes for each item or set of items. The advantage of this format was that it contained examples of unbiased probes for the interviewers to rely on until they became proficient with the instrument. The HOME was placed at the end of the mother's questionnaire and was administered at the end of the visit. This not only allowed the visit to end on a relaxed note, but allowed the interviewers many opportunities to collect as much data as possible through observation rather than through direct questioning, a method more in keeping with the spirit of the HOME. All together, the indepth section of the interview took approximately 90 minutes to administer.

Finally, the project had 90 minutes of videotaped mother and child interactions. These interactions consisted of problem solving, free play and clean-up, three related reading tasks, a story completion task, family snack time, separations and reunions. Exhibit 1 contains a summary of the tasks. The remainder of this paper deals with the problems inherent in conducting non-traditional data collection.

IV. CHALLENGES OF NON-TRADITIONAL DATA COLLECTION

A. STAFFING

Traditionally, the administration of indepth assessments and guiding a mother-child dyad through interactional tasks are performed by trained researchers. Because the interviewing would be done in people's homes, at their own schedules, and locating would be a major component of the job, we thought it inadvisable to use graduate students for data collection. Graduate students would have other demands on their time that would limit their availability and would be less skilled at the contacting and locating

aspects of the job. The interviewing was divided into two specialized positions. The *coordinator*, an interviewer with experience contacting and locating respondents and administering survey questionnaires, was responsible for setting up the interview, administering most of the indepth assessments to the child, and giving the mother the instructions for the interactional tasks. The *associate* was responsible for videotaping the interactional tasks, instructing the mother on the story reading task, and administering the PPVT-R to her. We originally did not look for associates with experience in videotaping, assuming anyone could be trained to use the cameras (which turned out to be only partially true). Capturing the picture was relatively easy, but understanding subtleties of lighting and sound turned out to be more difficult. In retrospect, we should have only hired people with experience using videocameras. We planned to have coordinators and associates work as teams, which would be broken up only if one member could not keep an appointment. After two weeks we found that this did not work. While a few coordinators and associates preferred to work as a team, most of the others preferred to work with whomever was available. Availability turned out to be the determining factor in pairings because some interviewers resigned, some were fired, and others were not available when we needed them. We had staff turnover for a variety of reasons. Some were unable to completely master the protocol. And some of the most experienced interviewers on our original team failed on this project because of the very skills that made them excellent interviewers; i.e., they wanted to press ahead and complete their assignments while the quality control procedures required that they hold back.

The project's quality control procedures, discussed below, required that in the early stages interviewers obtain feedback and achieve a high level of competence before they could complete interviews at their own pace. The most experienced interviewers were anxious to locate and contact respondents and, understanding how unstable and unstructured the lives of some respondents were, they wanted to complete interviews as soon as a respondent was located. But in the early stages of the project we required them to wait until they had received feedback on one case before they were permitted to do another. This frustrated many of the more experienced interviewers and led to conflicts with the office when we discovered that they had gone ahead and done more cases without permission and had done them incorrectly. The turnover among the associates was often caused by this same frustration of not having much work at first. While awaiting feedback, the coordinators could

spend time contacting and locating whereas the associates did not have any other tasks.

B. PROTOCOL DEVELOPMENT

In developing the protocol, three tasks had to be addressed: selecting measures that could be reliably administered in the field, sequencing the tasks to reduce burden and minimize parental interference, and developing verbatim scripts and detailed instructions for the interviewers.

When selecting measures for the study the foremost consideration was ease of administration. Converting measures that are typically administered under controlled situations in a laboratory by trained professionals or graduate students into measures that can be reliably administered by lay field interviewers proved to be a significant challenge. Indeed, some measures originally selected had to be deleted from the protocol because we felt they would not work under field conditions. At first glance, the administration of many of the tasks selected seemed to be intuitive: e.g., instructing the mother to play with her child as she normally would. Yet even this task proved complicated when we had to standardize it. The complicating factors included task performance location. We wanted it done on the floor. But what would happen if the mother didn't want to sit on the floor? What would happen if there wasn't enough room for the camera person to record the mother and child playing on the floor? How should the toys be arranged to ensure the child's equal exposure to all of them? And how could they be arranged quickly? How should the interviewer handle a child who refused to relinquish a toy? And what should the interviewer do about other siblings who wanted to be included in the fun?

At first glance, other tasks seemed difficult to administer. For example, the doll story component, designed to measure children's attachment to their mothers, was inherently difficult to administer because of its open-ended structure. In this task, children act out stressful situations using a doll family. Examples of stressful situations are spilling juice, falling off a rock at the park, and being left in grandmother's care while mother goes on a trip. Interviewers had to motivate the children enough so they would role-play the situations independently. In some cases this was achieved, while in others children acted out their own stories and would not follow the stories of the interviewer. A preliminary review of the data shows that the children's age and PPVT-R score correlate with successful engagement in the task and role playing.

Having chosen the tasks, our next step was to sequence them. Sequencing was complicated in that we chose to run tasks with the mother and child

simultaneously. This was done to minimize the time the interviewers would spend in the household. We also chose to place the more demanding and fatiguing tasks early in the protocol.

It was also important to keep both mother and child busy at all times because this precluded the mother from interfering with her child's activities. The pretest showed the importance of this decision. In the Preschool Inventory, the interviewer sat facing the child and the mother happened to sit behind the interviewer. This seating arrangement permitted the mother to signal answers to her child. For example, she moved her body when the child was asked to wiggle. In a real case, this would have ruined those data, and we might have been unaware of it.

To allow rapport to be built up when tasks were done simultaneously we tried as much as possible to have the coordinator work with the child and the associate work with the mother. We could not always follow this methodological preference because we found there were times, for example, during the doll story task, when the videocamera had to be operated but the cameraperson was needed to work with the mother. Occasionally we found that the associate had to work with the child because the coordinator's skills were required, for example, to administer the questionnaire and the HOME to the mother.

Once the tasks were selected and the sequencing of the tasks was determined, the actual written protocol had to be developed. The instructions and format for the interviewer protocol had to be easy to follow with precise instructions. The design team grappled with how much latitude interviewers should be given--whether they should be required to read instructions verbatim or be allowed to paraphrase them. After viewing the first few practice tapes we were nervous about how easily an interviewer could bias a task by giving too much help to the mother and child in the interest of engaging them in a task, and decided that a strict verbatim reading was the only way we could standardize the administration.

Interim debriefings were held with the interviewers during the field period and the protocol was modified based on interviewer feedback.

C. TRAINING AND SUPPORT

The project team was aware from the beginning that training interviewers to administer the protocol reliably would be a difficult task. We allocated five days to train the interviewing coordinators, and three days to train the associates. The first four days of coordinator training (and first two days of associate training) were devoted to learning the protocol. The coordinators practiced with each other and the training staff. Although having children present in the

training rooms as practice subjects would have been desirable, costs, time constraints, and logistics ruled it out. (For a later training of a small group of associates who were being promoted to coordinators, we brought in one child for part of the training.) Instead of bringing children to training, we required the interviewing teams to do a practice protocol and videotape with a child they knew. Staff at Barnard College viewed the resulting tape to evaluate interviewer performance. The final day of training was devoted to reviewing the team's practice interviews and discussing any difficulties that were turned up systematically in the tapes. Following training, the interviewers were instructed to complete one case with a sample member and send this case to Barnard College for review before attempting other interviews.

Because we underestimated the amount of on-the-job training required, the quality of the early cases was disappointing. To remedy the problem we implemented a three-tier approach to "certifying" individuals. Until the most important and straightforward tasks (problem solving, free play, and cleanup) were mastered, coordinators and associates were not permitted to do another case unless they received feedback on the previous case. After these basic tasks were mastered, the interviewers were not permitted to complete more than two additional cases until the supplemental protocol (separations and reunions, storytime instruction, snacktime, and story completion) was mastered. Finally, when they had mastered the entire protocol, they could proceed at their own pace and researchers at Barnard College gave them feedback as needed.

In planning for training we assumed that the learning curve for administering the easiest tasks, such as the puzzle task and free play task, would be relatively steep. We thought that coordinators and associates could learn these tasks adequately by the end of the second interview, and perform them quite well by the end of the third or fourth interview. The more difficult tasks would, we assumed, take longer to master, but would be performed adequately by the third or fourth interview. Thus we had assumed that field staff would move quickly through the first two tiers of certification. However, when faced with the need to follow the protocol rigorously under unpredictable field circumstances, the learning curve turned out to be fairly shallow. Coordinators and associates typically required three or four interviews before they had mastered administering the basic tasks without unwarranted editorialization. One of the more straightforward sets of tasks, the task of separating the mother and child for a few minutes and then bringing them back together, turned out to be very difficult for the interviewers to master. This task, which was easily

carried out in a laboratory setting, was awkward and artificial when carried out in the home where the mother often had no choice but to remain in the same room. Moreover, it was difficult for the interviewers to keep the reunion of the mother and child natural. The purpose of the reunion was to observe how mother and child interacted after a separation. In the field this was complicated because mothers wanted to use the time to do other things and there were other children who wanted or needed attention. And, naturally, mothers felt that this unstructured time could be used for those purposes. The length of time it took some interviewers to master this task, and some of the others, was surprising.

The certification approach improved the quality of the interviews dramatically. However, it slowed the flow of work. There were snags in getting tapes from interviewers to Barnard and in getting feedback from Barnard to the interviewers. Certification thus extended the field period and increased management costs. After four months in the field, no interview coordinators had gotten beyond the second stage and two associates were still at stage one.

When we had to replace coordinators, we decided to replace them by promoting associates rather than hiring new staff. Since the remaining staff had a good understanding of the associates job, we asked them to recommend candidates. Our second round of staffing proved to be quite successful. This approach to restaffing not only reduced the time required for new coordinators to learn their roles, since they were already quite familiar with the protocol, but increased the project's flexibility to schedule interviews, since new coordinators could fill either role on a team.

D. CENTRAL OFFICE COORDINATION

The challenge presented by this project required extensive central office coordination support. Originally we had planned to talk to the coordinators once a week, assuming that these calls would be fairly standard field report calls, collecting production and cost statistics and answering some technical questions. We quickly realized that more extensive contact would be required for several reasons. First, since all coordinators and associates were not certified for interviewing simultaneously, assistance was needed in finding associates who were permitted to complete another case. Second, coordinators and associates were not always available at the same time and it was easier for someone in the office to keep track of their availability than for coordinators to try to find associates who could meet field appointments.

One final factor led to more central office coordination. Because field staff were not equally capable in performing the difficult task of locating

respondents, we decided to try to make initial contact and to schedule appointments from the central office. We assigned two telephone interviewers who had worked on the TPD study and who were familiar with the respondents and their mothers to work on this activity. These interviewers not only located respondents and scheduled appointments for the indepth assessments and videotaping, but, where possible, administered some of the survey questionnaire. The central office coordinator then had to move quickly to arrange for a team to keep the appointment.

E. CONFIDENTIALITY

Issues of confidentiality are always a concern in our field; however, in general, if identifiers are stripped from the data, respondents can remain anonymous.

It was hard to protect identities because respondents, their children, and homes were videotaped. We asked respondents to choose between two restriction levels of access to the data. The less restrictive option allows professional audiences, such as this one, to view the tapes, while the more restrictive permitted viewing only by researchers working on the project.

The more restrictive consent was presented when the interviewer entered the house. Clearly, unless the respondent consented, data collection could not take place. At the end of the videotaped portion of the visit, the interviewer asked the respondent if she would allow the tape to be shown as part of trainings or conferences. The level of consent obtained became the first part of the videotape record.

We waited until the end of the visit to ask for the second level of consent so that a relationship of trust could be established with the respondent, and they could make the decision based on what actually occurred during the session. Overall, 49% of the women agreed to the less restrictive consent.

IV. CODING

The coding of the data continues. It is a process involving many reviews of the tapes for different purposes. These reviews, some occurring simultaneously, involve coding for the systematic documentation of the context and quality of the videotape and coding the quality of the interaction tasks.

Each tape was first coded for "codability," that is, lighting, the visual angle of the camera, quality of the sound, the ability of the field staff to follow the protocol correctly, the background environment and level of chaos, and the presence of other people who were influencing the interactions of the mother/child dyad. These types of technical problems might be present to a greater or lesser degree and might affect a small part of the tape or most of it.

Coding of the interactions is still taking place. For example, maternal sensitivity is being coded from the free-play activity in three domains.² In general, mothers are scored on sensitivity, control and unresponsiveness in five dimensions: vocal expression, position and body contact, expressions of affection, pacing of play (i.e., the ability to take turns), and control. The scores are then correlated with scores from children's assessments to discover whether maternal sensitivity predicts certain indices of children's behaviors.

Types of attachment behavior exhibited by children will be coded across as well as within episodes. A coding team at Barnard College is being trained to observe children's behaviors in most of the episodes. A global rating score of the quality of the children's relationships to their mothers will be derived from this. Coders will sort a deck of 100 descriptive items into nine piles ranging from descriptors that are most characteristic of the child's behavior to descriptors least characteristic of the child's behavior. Examples of descriptors are: "child visually checks in and vocally interacts with mother"; "child ignores mother upon reunions"; and "child's relationship with mother is characterized by power struggles." The scores that these children receive from this procedure will then be correlated with scores from maternal and other child assessments to discover whether the quality of the children's relationships to their mothers can be predicted by maternal characteristics such as maternal sensitivity.

V. CONCLUSION

A project like this should not be undertaken lightly. Equipment costs are high (both for initial costs and replacing stolen equipment), training and ongoing interviewer support are difficult, yet we believe the rewards in the complexity and quality of the data obtained are worth it. If early coding of the data is a true indication, this technique provides data of high quality that can be used to understand in greater depth the factors affecting children's development.

EXHIBIT 1: INTERACTION TASKS

Problem Solving:

2-3 sets of problems to solve (puzzles). Parents are told to allow the child to work on his/her own at first and then give whatever help is needed. Parent's quality of assistance and emotional supportiveness and child's task orientation/persistence and positive affect/enthusiasm are coded.

Free-Play:

Child is invited to play with a tub of novel toys. Maternal sensitivity (vs. control or unresponsiveness) and child's affect are coded.

Clean-Up:

The interviewer asks the mother to ask the child to help put the toys away. Parent's authoritative/permissive parenting style and child's compliance/cooperation are coded.

Separation:

Interviewer announces that mother and child will be working separately, each with one interviewer. The mother and child are left "alone" for 3 minutes to prepare for the separation, and the child's reaction to the actual separation is taped.

Reunion:

The reunion, after working separately, is taped and coded for indices of security/insecurity.

Reading:

Three components: mother reading to her child "as she usually would," the interviewer demonstrating an interactive story reading method to the mother, and then the mother reading to her child a second time. The tape is coded to assess mother/child interactions. Child language behaviors and maternal language teaching styles can also be coded.

Snacktime:

To reduce fatigue, a snacktime was included. The choice of food (soda vs. juice, cheese vs. donuts), how the meal is structured, and how conflicts about the choice of food are resolved will be coded.

Doll Stories:

The interviewer sets up a role-playing situation using a doll family. The interviewer starts the story and tells the child "show me what happens now." The child's attachment is coded on three dimensions: security, anxious/avoidant and disorganized/disoriented.

¹ The two key researchers working with MPR in the embedded IDP study are Dr. Larry Aber of Barnard College, Columbia University and Dr. Jeanne Brooks-Gunn of Columbia Teachers College and the Educational Testing Service (ETS). Dr. Geoff Goodman and Pam Morris represented Drs. Brooks-Gunn and Aber in coordinating the review and coding of the videotapes.

² Pat Crittenden at the University of Miami has identified the three descriptors of maternal behavior in this area on which the tapes are coded: sensitive, controlling, and unresponsive.