

DEVELOPING THE SURVEY OF PROGRAM DYNAMICS SURVEY INSTRUMENTS¹

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I. Introduction

President Clinton signed The Personal Responsibility and Work Opportunity Reconciliation Act of 1996, more commonly known as the Welfare Reform Act, on August 22, 1996. One section of the Act charged the U.S. Bureau of the Census:

- To continue to collect data on the 1992 and 1993 panels of the Survey of Income and Program Participation (SIPP) to evaluate the impact of the law on a random national sample of recipients of assistance;
- To pay particular attention to the issues of out-of-wedlock birth, welfare dependency, the beginning and end of welfare spells, and the causes of repeat welfare spells; and,
- To obtain information about the status of children participating in such panels.

Toward this end, the Census Bureau developed the Survey of Program Dynamics (SPD). With current funding, the SPD will extend the 1992/93 SIPP panels through 2002 resulting in 10-years of longitudinal data. This paper describes the challenges we faced in designing and testing the SPD survey instruments. (See Weinberg, et. al., 1998, for background information about the SPD. See also Kominski and Bass, 1998, for information on children's data in the SPD.)

II. Questionnaire Design Issues

The SPD is comprised of two parts. The first part is called the "core" instrument and includes questions about adults and children. The adult questions, with a few minor exceptions, are asked of all household members ages 15 and over. The core questionnaire was designed for computer-assisted personal interviewing (CAPI.) The second part is a separate self-administered questionnaire (SAQ) for adolescents 12-17 years of age. During the development of the SPD, we confronted various questionnaire design issues as the draft questionnaires were reviewed by subject matter and survey methodology experts. Some of the design decisions required major revisions of the questionnaire.

A. Adult questionnaire

The SPD collects data on employment and earnings for the preceding calendar year, for up to four jobs. Following the employment questions are a series of questions on income sources, income amounts, assets and debts. Initially we designed this series of questions similar to the March Income Supplement to the Current Population Survey (CPS). In that survey, all questions about one income source (e.g. who received it and the annual amount received) are asked before asking about the next income source. In order to reduce item nonresponse due to a conditioning effect, we abandoned this design in favor of the design used in the SIPP. In SIPP, we collect an inventory of income sources first. After compiling the different types of income received by all members of the household (e.g. unemployment compensation, Social Security, public assistance), we then ask the amount received from each income source identified. This was done to reduce the likelihood that respondents would stop reporting income sources because they don't want to answer all the follow-up questions (Mathematica Policy Research, Inc.).

In a departure from SIPP, which collects this information person-by-person to encourage self reporting, SPD uses household-level screening questions for each income source (e.g. Did anyone in this household receive any unemployment compensation payments at any time during 1996?") and a single household respondent. This was done to increase efficiency and reduce the amount of time spent collecting this type of information. We also explicitly encourage respondents to use records when reporting income and earnings information.

Another design issue is the collection of income amounts. To assess the impact of time limits associated with welfare reform, we needed to collect both the months a particular income source was received as well as the amount received. In SIPP amounts are collected for each month of the four-month reference period. In the CPS March Income Supplement, respondents are requested to report an annual amount. Based on research conducted during the redesign of the CPS labor force questions, we opted for a design that allowed respondents to report the income source in the manner that was easiest for them (Rothgeb and Cohany, 1992). The computer then calculates an annual amount that the Field Representative (FR) confirms with the respondent. This method was shown to reduce item non-response to earnings questions in the CPS and is less burdensome for respondents.

B. Child-related questions

As with many demographic household surveys, any household member age 15 or over is eligible to be the household respondent for the SPD; however, for the child-related questions we decided to be more restrictive. Census Bureau experts on children's issues indicated that mothers tend to know more about their children than fathers. They recommended asking the child-related questions of the "designated parent." In the SPD, the designated parent is defined as the mother in two-parent families, the resident parent in single parent families, and as the "person most knowledgeable about the child and his/her activities" in households without a parent.² If the mother is not available, we interview the father. If neither parent is available, we schedule a call back to talk to the mother. These procedures may increase costs and may also increase item non-response if the FR is unable to collect the data at a later date. However, researchers believe that the benefits associated with improved data quality outweigh the costs and risks.

C. Adolescent Self-Administered Questionnaire

The adolescent SAQ contains potentially sensitive questions on problem behaviors, alcohol and drug use, sexual activity and contraception. Protecting the privacy of adolescents was essential in designing this part of the survey. The questionnaire format and procedures mirror those used in the 1992 Youth Behavior Survey (YBS), which asked similar types of questions (Klein and Piencykoski, 1993; Camburn, Cynamon and Harel 1991). Adolescents who are home at the time the FR visits the household will be administered the survey using an audio-cassette player that contains the survey questions and will fill out an answer booklet while listening to the tape. The answer booklet contains the answers only and not the questions. Upon completion, the adolescent is instructed to place the answer booklet in the envelope provided and seal it before returning it to the FR. We also developed a separate booklet that contains the survey questions only. This booklet will be shown to parents who request to see the questionnaire. For privacy reasons, the questions are in a different order than those on the tape.

Based on results from the YBS, we estimate that half to two-thirds of the adolescents will not be home at the time of the original interview (Klein, Lazirki, and Piencykoski, 1993). We will not make callbacks to administer the adolescent SAQ in person. Instead the FR is instructed to conduct the interview by phone. To protect the privacy of the adolescent during telephone administration, we modified the questionnaire to ensure that answers provided would not reveal the content of the question asked (see Hess and Rothgeb, 1997 for additional information).

IV. Questionnaire Testing

A. Adult and Child-related Questions

The adult and child-related questions in SPD were designed for a CAPI environment. Originally plans called for cognitively testing sections of the automated instrument as they became available. The compressed time schedule meant that cognitive testing and instrument automation occurred simultaneously rather than consecutively. Rather than eliminate the cognitive testing, we decided to cognitively test those sections of the questionnaire that could be conducted, albeit somewhat difficultly, on paper. These included all adult and child-related sections with the exception of the employment, income sources, income amounts, and eligibility questions.

Testing selected sections using a paper instrument proved quite useful. We were able to identify individual questions and series of questions that caused problems for respondents. Problems identified included confusing and unclear reference periods, terms and concepts not well understood by respondents, and items that were too difficult for respondents to answer accurately (Hess and Rothgeb, 1997b). Below are two examples of problems uncovered as a result of cognitive testing.

Results from cognitive testing lead us to revise the entire work training series of questions. Originally this series started with the following introduction:

"Other than education in high school, college, or technical school, many people also receive work-related training. One kind of training is to help persons search for or be trained for a new job. A second type of training is to improve skills in their current job."

Following this statement were separate series of questions on the two types of training. The cognitive interviews indicated that the introduction confused respondents and often led them to report both types of training in the first follow-up series of questions. We eliminated the introduction and also deleted the second series of follow-up questions on training to improve skills in the current job.

Results of cognitive testing also led us to revise a question in the series on contact with absent parents regarding where the absent parent lives. The original question asked "Where does the absent parent live?" We wanted answers that could be coded into the following response options: 1) same county/city, 2) same state, 3) different state, 4) other. However, respondents provided answers that were not able to be coded without additional probing, such as "with his brother" or "with her parents." Other respondents thought the question was asking for the exact address and responded "don't know." We revised the question by decomposing it into two items: we ask first whether the absent parent and

resident parent live in the same state; if so, then we ask if they live in the same county/city. These two items will provide the same information as the original question with less risk of item nonresponse and less need for interviewer probing.

B. Adolescent SAQ

We conducted cognitive interviews with adolescents ages 12-17 using the version of the SAQ designed to be administered by an audio-cassette player. The objectives of the test included evaluating question understanding, task difficulty, and question sensitivity. To address the first two of these objectives, we conducted interviewer-administered cognitive interviews and instructed respondents to “think-aloud” as they answered the questions. Although this method of administration does not mirror the field administration by audio-cassette player, we believed that administering the questionnaire by audio-cassette player followed by cognitive probing questions would jeopardize our ability to adequately evaluate question understanding and task difficulty.

Three researchers at the Census Bureau’s Center for Survey Methods Research conducted the interviews. To ensure comparability across surveys, we developed a protocol beforehand that included additional probing questions to be used at the interviewer’s discretion if the respondent did not convey the information while thinking aloud or didn’t convey the information after general probes such as, “Could you tell me more about that?” At the end of the protocol we included a few debriefing questions regarding question difficulty and question sensitivity.

Below are some of the areas that caused the most problems for adolescents and the revisions that were made to the questionnaire. (See Hess, et. al., 1998 for additional details regarding the results of cognitive testing.)

1. Respondents tended to ignore reference periods when they were included in the questions. For example, the questionnaire contained a series of questions on parental monitoring of activities such as staying out late, television viewing, and friends. For each topic, we asked who set the limits on these activities (the parents, the child, or limits set jointly) and how often the adolescent had broken the limits. For example:

“In the past 30 days, how many times have you broken the limits about how late you stay out at night?”

The response options were 1) Never, 2) One or two times, 3) Several times, and 4) Often. During cognitive testing, we found that adolescents tended to overlook the 30 days reference period and answer the question for whatever reference period was relevant to them. In some cases, they reported events that happened outside the reference

period. In other cases, they reported what was “usual” for them; that is, they reported that they don’t usually stay out late. In an effort to keep the adolescents focused on the reference period, we revised the questionnaire to include all reference periods in the response options:

“How often have you broken the limits about how late you stay out at night?”

- 1) Never in the past month
 - 2) One or two times in the past month
 - 3) Once a week
 - 4) Several times a week
 - 5) Everyday or almost everyday in the past month
2. Respondents tended to interpret lists of examples too narrowly rather than as examples of a broader class of similar activities or events. They would report only about those activities included in the list of examples. We recommended being very cautious of including such lists. In some cases, we deleted the list. In other cases, we revised the list to include items we believed best reflected the concept of interest.
 3. Respondents had great difficulty reporting their contact with their absent parent in terms of a “typical month.” The original question asked “In a typical month about how many times do you see your outside parent?” Respondents were supposed to give a numeric answer. Instead they tended to report the last time the event happened if it was infrequent, or over report, by guessing, if the event occurred frequently. Moreover, these questions were particularly difficult for adolescents who had irregular contact with their absent parent, such as only during holidays and birthdays. We revised these questions to ask “how often” the event happens and included categorical response categories. An example is shown below:

“How often do you see your outside parent?”

- 1) Never
- 2) Once or twice a year
- 3) Several times a year, but less than once a month
- 4) Once a week
- 5) Several times a week
- 6) Everyday or almost everyday

In addition to eliminating the “typical month” concept, this revision allows respondents who do not see their absent parents on a regular basis to report their level of contact.

4. The cognitive interviews lasted from 60 to 90 minutes. We were concerned that the length of the interview and the tedious task of thinking aloud might prove too difficult for adolescents, who are generally portrayed as non-communicative and unable to focus for an extended period of time (Stussman, Willis and Allen 1993). Our experience proved contrary to expectations. Adolescents were quite capable of

articulating their thoughts in a think-aloud setting and quite able to focus throughout the lengthy interview.³ Based on our experience, we found a greater need to probe during these interviews than is typically done during cognitive interviews with adult respondents.⁴

V. Field Test Evaluation

A. Adult and Child-related Questions

A field test of the SPD was conducted in October 1997 for which there were 262 completed interviews. We used three methods to evaluate the results of the pretest questionnaire and field procedures including interviewing observation reports, FR debriefings, and review of interviewer/respondent interactions from taped interviews, also known as behavior coding. Eight Census Bureau staff observed a total of 25 interviews and completed an Interviewing Observation Form for each household they observed. The form was quite detailed and covered areas of concern such as difficulty administering the adolescent questionnaire at the same time as the adult questionnaire, adolescents' ability to use the audio-cassette recorder to answer the SAQ, flashcard usage, disruptiveness of changing respondents for the child-related questions, and difficulty with specific questions or series of questions (e.g. confusion with the reference period, terms or concepts that were not understood, questions that required extensive probing).

Representatives from CSMR and the Census Bureau's Field Division facilitated five debriefings sessions with FRs participating in the pretest. A total of 38 FRs participated in the debriefings with approximately 8 FRs in each session. Topics covered included those contained in the observer form, described above, as well as record usage, screen layout of the computerized instrument, problems with the instrument (collecting the household roster, demographics, function keys, etc.), manuals, training, case management, and the length of the interview. Many of the comments that FRs provided corroborated information obtained from other sources such as the interviewing observation forms and interviewer/respondent interaction analysis. FR suggestions included using consistent precodes for similar functions within the CAPI instrument; using household-level income screeners to eliminate inappropriate income, asset, and program eligibility questions from being asked; and including additional response options at selected items to permit identifications of persons for whom subsequent questions may not be necessary (see Hess 1997; and, Durant 1997 for additional information on the FR debriefings).

All FRs were requested to tape two complete interviews (with permission of the respondent) to be used for subsequent behavior coding. Behavior coding is the systematic coding of interviewer and respondent

interactions. Information obtained from behavior coding identifies questions that are potentially problematic, by identifying items that cause problems either for interviewers or respondents (Oksenberg, et. al., 1991). Due to the limited time available to analyze the pretest data and the length of the survey, systematically coding each question contained in all 78 tapes was not possible. Our analysis consisted of listening to the interview and noting any problems that FRs or respondents had with question wording, sequencing, unclear concepts or terms, difficult to answer questions or series of questions, and other behaviors or indicators of how well a question is measuring the concept of interest. We also listened for instrument problems and areas in which FRs needed additional training. The notes consisted of either verbatim transcripts, summaries of the interviewer and respondent exchanges for each problematic item, or an explanation of the instrument problem or training issue. (If there was no indication of a problem, no notes were made.) Thus, the data consisted of the question number and a description of the problem for the item. This information proved very useful in revising the questionnaire since it not only identified problematic items, but also provided information regarding the specific nature of the problem.

Review of the evaluation data collected during the pretest resulted in minor question wording changes implemented to clarify concepts, increase respondent comprehension, reduce task difficulty, and decrease burden. In a few cases, we needed to resequence a question series, include additional response categories, or include household-level income screeners. (Details available in Hess, Rothgeb, and Zukerberg, 1997.)

B. Adolescent SAQ

The FR debriefings, along with the interviewing observation forms, described above, provided feedback about the procedures used to administer the adolescent SAQ. During the pretest, 66 adolescent cases were transmitted to headquarters: 60 completed questionnaires, 3 parental refusals, 1 adolescent refusal, and 2 disabled adolescents who were unable to participate in the survey. Thirty-four of the pretest cases were completed using the audio-cassette player, with the remainder conducted by telephone from a FR's home. Information from both sources indicated that the procedures for the SAQ worked very well, to the surprise of many of the FRs who were concerned about potential sensitivity on the part of parents and privacy concerns on the part of the adolescents. There was very little reluctance from parents to allow their children to participate in the survey or on the part of adolescents to partake in the survey.

We included respondent debriefing questions at the end of the adolescent questionnaire regarding such issues

as privacy concerns, difficulty concentrating throughout the 30 minute interview, and question sensitivity. As noted previously, adolescents who answered the survey using the audio cassette player filled out an answer booklet that contained the answer boxes only and not the questions. We asked these respondents how concerned they would have been about their privacy if the questions and answers had been included in the booklet, thus, alleviating the need for the audio cassette player. Approximately 40 percent of respondents indicated they would be "very" or "extremely" concerned about their privacy and another 40 percent indicated they would be "somewhat" concerned, indicating that administering the questionnaire through an audio cassette player does increase the adolescents' sense of privacy (N=20).

All respondents were asked about their ability to concentrate throughout the survey and comfort level with the survey content. Most respondents (67 percent, N=51) said that it was "not at all difficult" to concentrate throughout the interview, with an additional 28 percent saying that it was "a little difficult" to concentrate. Debriefing data also indicated that respondents did not express much discomfort with the questionnaire content. Less than 10 percent indicated they were "very uncomfortable" answering questions about potentially sensitive topics. Low item non-response also suggests that question sensitivity was not of great concern to the respondents. (See Richter, et. al., 1997, for additional results of the adolescent questionnaire field pretest.)

Results of the field test alleviated prior concerns that Census Bureau staff had about parental and adolescent sensitivity to the adolescent self-administered component of the SPD. Operationally, administration of the adolescent SAQ went smoothly. Consequently, the same procedures used in the field test were recommended for the production survey. Based on review of the data and on FR debriefings, a few questions were modified for the production survey. Due to a high "don't know" rate to items in the "knowledge about welfare regulations" section, we deleted all but the two items specifically pertaining to teen mothers and welfare eligibility.

VI. Conclusion

Designing and testing the two survey instruments so that they meet the objectives of this survey as outlined in the Welfare Reform Act has been challenging. We are optimistic that the quality of the SPD data will be better due to the laboratory cognitive testing and field test questionnaire evaluation we conducted. Hopefully, respondents can more easily understand the questions and perform the requested tasks necessary to provide accurate answers to the survey. Our original objective was to design an SPD questionnaire that could reduce the

potential for non-sampling measurement error in the SPD and we are confident that this goal has been met. In order to determine the extent to which that goal was met, it is necessary to conduct a quality assessment of the SPD, which would be both costly and labor intensive. Resources are not available to conduct such an assessment. Currently, only a very limited quality assessment of the 1998 SPD instrument is planned. This will consist of the same methodologies used to evaluate the pretest and should identify potentially problematic questionnaire items. Whether this evaluation will lead to additional changes in the instrument is still under discussion.

Endnotes

1. This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a more limited review than official Census Bureau publications. This report is released to inform interested parties of research and to encourage discussion.
2. "Mother" includes biological, step and adoptive mothers.
3. Respondents were paid \$25 for participating in the research. Admittedly the monetary incentive may affect the respondents' willingness to focus on the tasks at hand.
4. This observation is based on our limited experience and is not grounded in empirical data.

Bibliography

- Amato, G. and G. Ochiltree (1987). "Interviewing Children About Their Families: A Note on Data Quality." *Journal of Marriage and the Family*. Vol. 49. pp. 669-675.
- Camburn, D., M. Cynamon, and Y. Harel (1991). "The Use of Audio Tapes and Written Questionnaires to Ask Sensitive Questions During Household Interviews." Paper presented at the National Field Directors and Field Technologies Conference. San Diego, CA.
- Durant, S. (1997). "SPD Pretest FR Debriefing Summary." Memorandum for the record dated November 24, 1997. Bureau of the Census.
- Hess, J. (1997). "SPD Pretest Field Representative Debriefing Summary." Unpublished report. Bureau of the Census.
- Hess, J. and J. Rothgeb (1997a). "Measuring the Impact of Welfare Reform: Issues in Designing the Survey of Program Dynamics Questionnaire." Invited paper

presented at Symposium 97: New Directions in Surveys and Censuses, Statistics Canada.

Hess, J. and J. Rothgeb (1997b). "Recommendations for Revisions to Selected Sections of the SPD Questionnaire." Memorandum to B. Kominski dated May 9, 1997. Bureau of the Census.

Hess, J., J. Rothgeb, and A. Zukerberg (1997). "Survey of Program Dynamics Pretest Evaluation Report." Unpublished report. Bureau of the Census.

Hess, J., J. Rothgeb, A. Zukerberg, K. Richter, S. LeMenestrel, K. Moore, and E. Terry (1998). "Teens Talk: Are Adolescents Willing and Able to Answer Survey Questions?" Poster Session presented at the annual meeting of the American Association of Public Opinion Research, St. Louis, MO.

Klein, D., B. Lazirko, and C. Piencykoski (1993). "Final Summary Report for the 1992 Youth Behavior Survey." Unpublished report. Bureau of the Census.

Klein, D. and C. Piencykoski (1993). "Summary of Responses to Youth Behavior Survey Opinion Questionnaire." Unpublished memorandum. Bureau of the Census.

Kominski, R., and L. Bass (1998). "Developing Children's Data for the Survey of Program Dynamics." Paper presented at the Annual Meeting of the American Statistical Association, Dallas, Texas.

Mathematica Policy Research Inc. "SIPP Site Test Analysis: The Evaluation of Experimental Effects on Data Quality -- Task 2 Report."

Moore, K. and S. Miller (1997). "Rationales for Collecting Data About Adolescents in The Survey of Program Dynamics." Child Trends, Inc. Washington, D.C.

Oksenberg, L., C. Cannell, and G. Kalton (1991). "New Strategies for Pretesting Survey Questions." Journal of Official Statistics, 7, pp. 349-365

Richter, Kerry, Kristin Moore, and Suzanne Le Menestrel. 1997. Survey of Program Dynamics October 1997 Adolescent SAQ Pretest Results. Unpublished report. Childs Trends, Inc., Washington, DC.

Rothgeb, J., and S. Cohany (1992). "The Revised CPS Questionnaire: Differences Between the Current and the Proposed Questionnaires." In Proceedings of the Section

on Survey Research Methods, Alexandria, VA: American Statistical Association.

Stussman, B.J., G.B. Willis, and K.F. Allen (1993). "Collecting Information from Teenagers: Experiences From the Cognitive Lab." Proceedings of the Section on Survey Research Methods. Virginia: American Statistical Association. pp.382-385.

Weinberg, D., P. Doyle, A. Jones Jr., S Shipp (1998). "Measuring the Impact of Welfare Reform with the Survey of Program Dynamics." Paper presented at Annual Meeting of the American Statistical Association, Dallas, TX.

Zukerberg, A. and J. Hess (1997). "Uncovering Adolescent Perceptions: Experiences Conducting Cognitive Interviews with Adolescents." Paper presented at the annual meeting of the American Association of Public Opinion Research, Norfolk, VA.