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Programming Blaise for a Multi Questionnaire Study

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Outline

- PSID Study Background
- CDS Study – Multi Questionnaire Design
- Coverscreen Questionnaire
- Parallel Block Programming
- Woodcock Johnson Assessments Programming



PSID Background

The Panel Study of Income Dynamics (PSID) is a longitudinal survey of a representative sample of U.S. men, women, children and the families in which they reside. Data on employment, income, wealth, housing, food expenditures, transfer income, and marital and fertility behavior have been collected bi-annually since 1968. From 5,000 families in 1968, the study has grown to include over 10,000 families.



CDS – Multi Questionnaire Study

Child Development Study (CDS) – PSID Sub Study

Three Questionnaires:

- CoverScreen
- Child
- PCG



CoverScreen

- First Questionnaire for a Family Unit
- Generate Child and PCG (Primary Care Giver)
- It is very important to be programmed accurately and user friendly



CoverScreen – Relationship Table

It is used to identify CDS children’s relationships with other FU members. In order for users to navigate the table easily and complete table quickly and correctly, some complex programming were added. In the example below, at row 5, user entered 17 - Austin is a brother of Kara . Then, at row 6, user did not need to enter the relationship repeatedly. 13 is auto assigned – Kara is a sister of Austin.

The screenshot shows a software interface for defining relationships between children. At the top, a list of children is displayed with checkboxes:

- 3. Sarah Davis, 10, Daughter, CDS Child-Eligible
- 4. David Davis, 11, Son, CDS Child-Eligible
- 5. Brad Davis, 14, Son, CDS Child-Eligible
- 6. Alex Davis, 15, Son, CDS Child-Eligible
- 7. Anna Dans, 16, Niece of Wife, CDS Child-Eligible
- 95. None

Below the list is a relationship table. The columns are labeled with child names: Doug[1], Austin, and Kara. The rows are labeled with child names: Doug[1], Austin[5], Kara[6], Sarah[7], and David[8]. The table contains numerical values representing relationships. A text input field with the value '2-3-4-5-6' is located between Doug[1] and Kara. The cell for the relationship between Austin[5] and Kara[6] contains the value 17. The cell for the relationship between Kara[6] and Austin[5] contains the value 13. Other cells contain values 5, 1, 4, 6, 1, 4, 6, 5, 95, 6, 6, 95, 6, 7, 13, and 6, 8, 17.

	Doug[1]	Austin	Kara
Doug[1]	5	1	4
Austin[5]	5	5	95
Kara[6]	5	6	13
Sarah[7]	5	7	13
David[8]	5	8	17



CoverScreen – Relationship Table

To achieve the conversion

- As many as 4 For/Do loops are used,
- Keeps are used in order to pass data from parent blocks to child blocks
- A procedure is used to convert sister and brother code so the program is simplified

```
xRTCPrev := EMPTY      {Start empty}
FOR I:=1 TO 24 Do
  IF I<pFmIndex THEN    { Loop Previous Rows}
    FOR J:=1 TO Num_CDSKid DO {Loop all columns}
      IF RTCFmLstB[I].RICCDSLstB[J].RICCDSAQSN = pRTCMAQSN      {AQSNs are FU member's IDs}
      AND RTCFmLstB[I].RTCFMAQSN = RTCCDSAQSN THEN
        IF RTCFmLstB[I].RICCDSLstB[J].RTC >=BSister AND RTCFmLstB[I].RICCDSLstB[J].RTC<=Cousin THEN
          {Biological/Step/Half/Adoptive Sister/Brother or Cousin }
          xRTCPrev := RTCFmLstB[I].RICCDSLstB[J].RTC
          xGender1 := RTCFmLstB[I].RICCDSLstB[J].RTCCDSGender
          xGender2 := RTCFmLstB[I].RTCFMGender
        ENDIF
      ENDIF
    ENDDO
  ENDIF
ENDDO
IF xRTCPrev<>EMPTY THEN      {Found a match}
  {Procedure Assigning code to the current cell based on previous Gender and Relationship}
  AssignSibRelCode (xRTCPrev, xGender1, xGender2, RTC)
  RTC.SHOW
ENDIF
```



CoverScreen – Preload Generation/Testing

After finishing the coverscreen, the system generates preload strings for PCG and Child instruments. Both datamodels have large number of preload to be pulled from the Coverscreen datamodel. In order to generate and test the process properly, the processes are as follows:

- Create preload strings in Coverscreen Blaise datamodel
- Test the preload generation in our CAI testing system – a new testing feature was added
- In production, our SMS system only need to pull a small number of variables from Coverscreen to be loaded into subsequent PCG and Child datamodel



Parallel Block Program

In PCG and Child's datamodel, it is used to allow administering different survey sections concurrently.

- One procedure to setup different statuses
- Startparallel is used if the link is clicked so DEP will jump to the designated parallel block
- Color codes are used for different kind statuses

The image shows two windows side-by-side. The left window is 'Blaise 4.8 Control Centre - (Untitled)' showing a procedure named 'getStatusFillbyBlock'. The right window is 'paralle.png - Windows Photo Viewer' showing the output of the procedure.

```
PROCEDURE getStatusFillbyBlock
parameters
  import blockName:string
  import PersonStatus : TParallelBlockStatus
  export OutFill:string
AUXFIELDS
  xHtmlFront : string[200]
  xHtmlEnd: string[40]
RULES
  xHTMLFront := '@|<a href=Blaise:setparallel(''+blockName+'')>'
  xHTMLEnd := '</a>'
  (if no Jump (link), add @| in front, for jump use xHTMLFront!)
  IF PersonStatus =NA THEN
    OutFill:=OutFill+ '@|' + '<font color=Gray>N/A</font>' (No li
  ELSEIF PersonStatus =NotStart THEN
    OutFill:=OutFill+xHTMLFront +'<font color=Red>Not Started</font>'
  ELSEIF PersonStatus =Start THEN
    OutFill:=OutFill+xHTMLFront +'<font color=#0080FF>Started</font>'
  ELSEIF PersonStatus =Done THEN
    OutFill:=OutFill+xHTMLFront +'<font color=#0080FF>Done</font>' +
```

The right window shows the output for 'CDS 2014 Child' and 'CDS14Child'. The status is 'N/A' for 'Child Interview Section & Obs:' and 'Not Started' for 'WCJ Section & HH Obs:'. A blue bullet point indicates: '• Not all sections are completed. Please select a section by clicking on the status.' Below this is a radio button labeled '1. Continue'. At the bottom, there are fields for 'RECORDEDIW CONSENT', 'GLASSES OR HEARING AID 14', 'GRADE IN SCH 14', and 'Parallel Block Status'.



Parallel Block Program – Cont.

Another use of parallel block is to enable and disable the Achievement Tests in the Child and PCG datamodels.



Woodcock Johnson Assessments Programming

The Woodcock Johnson (WCJ) Test of Achievement is a well-known, established educational assessment tool. CDS has three subtests. They are:

- Letter-Word Identification
 - Passage Comprehension
 - Applied Problems
-
- In this wave of CDS, we modularized the programming code so it is easy to maintain
 - One procedure for Basel calculation and another procedure for Ceiling calculation – they are called as many as 80 times
 - To be able to use procedures for different tests and different items, parameters are passed into the procedures
 - More over, same tests can be used for both PCG and Child datamodels



Conclusions

CDS is a complex study. Several challenging features were specified by the research staff in order to assist interviewers in easily navigating the various data collection instruments while collecting quality data. With careful design, testing and implementation, new features were developed to program three high quality instruments, they are well accepted by the research staff, project team and interviewers.

From our experience, Blaise proves to be a powerful and flexible survey program system and helped us to achieve almost all complex requirements for this study.