NLSY

CHILD

HANDBOOK

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Center for Human Resource Research
The Ohio State University

NLSY CHILD HANDBOOK 1989

A Guide & Resource Document For The National Longitudinal Survey of Youth 1986 Child Data

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Preface and Acknowledgements

The NLSY child data described in this Handbook represent a unique data source for the social and behavioral science research community. For perhaps the first time, there is available for a large, nationally representative data set sufficient information to permit careful explorations of many of the ways in which families, particularly mothers, affect the early social, emotional, cognitive and physiological development of their children. The depth and breadth of information available in this data set reflect the intellectual versatility of those who have been involved in the development of this survey.

The NLSY data set has historically been used primarily by economists and sociologists; and it is individuals from those disciplines who contributed most to the initial development of the NLSY data set. The principal thrust of the more recent child data collection has been in the area of maternal/child health and psychometric behavioral information. The variety and quality of the maternal-child health data has benefited, in large measure, from the expert advice of the staff at the National Institute for Child Health and Development, particularly members of the Demographic and Behavioral Sciences Branch of the Center for Population Research and the Biometry branch of the Epidemiology and Biometry Research Program. With the introduction of child assessment measures into the NLSY survey, we have entered a totally new domain not only in terms of the kinds of data collected, but also regarding the collection of these kinds of data in a large scale survey using well qualified but nonetheless lay interviewers. This child assessment data collection would not have been possible without the close and continuing assistance of a large cadre of outstanding advisors from the field of survey research and psychology. The members of this "support group" are too lengthy to list here. We hope they understand how integral they have been to this project.

The support of these and other individuals was absolutely essential to the development of the child survey. The Department of Labor, represented by Michael Pergamit, the Bureau of Labor Statistics monitor for the NLS project, has been extremely supportive of this attempt to expand the NLS beyond traditional economic and sociological data collection efforts. In addition, without the financial support of the NICHD, as well as a number of private funders, the data collection could not have happened. For this reason, we gratefully acknowledge the funding provided by the Center for Population Research of the National Institute of Child Health and Human Development. We also wish to thank the various private funders who have provided financial and intellectual assistance at various stages of this massive data collection effort. These include the Carnegie, Ford, Grant, Hewlett, Rockefeller and Sloan Foundations.

We are particularly indebted to the Foundation for Child Development which has assisted us financially and intellectually in all phases of the development of the child survey. They have coordinated the activities of our advisory group, provided funds for a summer workshop which helped smooth the way for many psychologists who wished to access our data, and provided the funds for the preparation of this Handbook. Heidi Sigal of the Foundation has been a constant source of psychological and intellectual support for these various activities.

Bob Michael, Director of NORC, played an integral role in the early development of this child survey as did Kenneth Wolpin and the late Michael Borus, prior principal investigators for the National Longitudinal Surveys. Randy Olsen, the current NLS principal investigator, has continued this tradition of strong support. CHRR, NORC, and NICHD staff too numerous to mention, are responsible for maintaining the integrity of the data set. The high quality of the data speaks to the extraordinary effectiveness of their work.

A number of individuals have been directly involved in the preparation of this Handbook and deserve our special thanks. At the CHRR, Nicki Stassen Lantz played a major role in developing the tabular material, and David Weaver helped prepare the background materials relating to the specific assessments. Pat Marnell at NORC provided us with information about the field procedures utilized by NORC in the collection of these data. The responsibility for typing this document fell on Suzanne Knowlton. Her good humor under stress and her outstanding typing made the whole process much more bearable. We are particularly indebted to her.

Finally, the genesis and success of this project reflects, more than any other single factor, the effective leadership role played by Wendy Baldwin, the chief of the Demographic and Behavioral Sciences Branch of the Center for Population Research of the NICHD. Her innovative intellectual and administrative leadership and perseverance helped translate an already established, strong economic and sociological data set into one which transcends traditional social science thinking and which permits meaningful comprehensive cross-generational mother-child research. She not only provided important psychological and intellectual support, but also through her unique, almost magical administrative capabilities, found the funds to initiate and continue this study. Using demographic literary license, it is not inappropriate to perhaps term her the mother of the children of the NLSY.

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INTRODUCTION

Development of the NLSY

The National Longitudinal Survey of Youth (NLSY) is an outgrowth of a larger research project initiated in the mid-1960s to analyze the sources of variation in the labor market behavior and experience of four groups in the United States population. The National Longitudinal Surveys of Labor Market Experience (NLS) were originally comprised of four cohorts: men 45 to 59 years of age, women 30 to 44 years of age, and young men and women 14 to 24 years of age. In 1979, the NLS Youth was launched to permit replication of much of the analysis made of the earlier cohorts and to help evaluate expanded employment and training programs for youth in the late 1970's. This fifth cohort consisted of a national sample of civilian and military young men and young women between the ages of 14 and 21, with overrepresentation of blacks, Hispanics, and economically disadvantaged whites. The NLSY sample of civilian and military youth was interviewed for the first time in early 1979. Reinterviews with the NLSY civilian youth sample have occurred annually since that time; the military sample was interviewed from 1979 through 1984.

While the primary purpose of the NLSY has been the collection of data on labor force experiences, information has been regularly gathered on factors that potentially affect labor market attachment, i.e., investments in education and training; geographic region of residence and local labor market conditions; the formative influence of parents; current marital status and family responsibilities; financial characteristics; work-related attitudes and aspirations; as well as such potentially delimiting factors as health problems and job discrimination.

Beginning in 1979, a five-year cooperative effort of the National Center for Research in Vocational Education and CHRR resulted in a survey of the high schools of civilian NLSY respondents and the collection of detailed transcript information on high school completers. In 1980 under joint sponsorship of the Departments of Defense and Labor, the Armed Services Vocational Aptitude Battery was administered to NLSY respondents. In 1981, the National Institute of Education sponsored a set of time-use questions. Alcohol and substance abuse questions were added to the 1982-1985 youth surveys with funding from the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse. In 1982, the National Institute of Child Health and Human Development

(NICHD) provided funds for the introduction of a comprehensive set of fertility and childcare questions into the NLSY. These components have been included each year through 1986 and again in 1988. Finally, with NICHD funding, a battery of cognitive and socio-emotional assessment instruments was administered to children of female NLSY respondents in 1986 and 1988.

The Children of the NLSY Mothers: An Overview

The 1986 and 1988 waves of the National Longitudinal Survey of Work Experience of Youth (NLSY) included the administration of an extensive set of assessment instruments to the children of the female respondents. These assessments encompass cognitive, socio-emotional and physiological aspects of the child's development as well as information about the quality of the home environment. The assessments were completed by 4,971 children in 1986 or about 95 percent of eligible children whose mothers were interviewed in 1986; parallel information will be available for more than 6,000 children in 1988. Thus, for a very large sample of children, assessment information which can be linked with a vast array of child, maternal and family background information will then be available for two points in time.

At present, the 1986 NLSY child data are available to the research community in two forms: a child assessment "raw" item file, which includes all of the assessment information exactly as it was collected from the children and their mothers, and a "merged child-mother" file, which includes a vast array of information about the children and their families. The merged file, in which all the children of the NLSY mothers are the actual respondents, includes a variety of constructed normed and non-normed scores for the various assessments, the actual responses for a selected subset of assessments, and considerable information about the social, economic and family characteristics of the children's mothers and families. Some of this maternal information is based on reports at the time of the interview and some is linked temporally to the birth of the child. These two data files and their documentation are described in detail in this Handbook.

NLSY Survey Content

The NLSY main survey instruments contain core sets of questions on the following topics: (1) marital history; (2) schooling; (3) current labor force status; (4) jobs and employer information; (5) training; (6) work experience and attitudes; (7) military service; (8) health limitations; (9) fertility; (10) income and assets; and (11) geographic residence. While information on these topical areas has been collected each survey year, the number of questions on any given topic as well as the wording and universes for each question may differ from year to year.

Additional sets of questions on a variety of factors potentially affecting a young person's labor force attachment have been included for selected survey years. The initial (1979) survey collected information on family background, knowledge of the world of work, a retrospective evaluation of labor market experience, the influence of significant others, and an abbreviated Rotter locus of control scale. Subsequent surveys have included questions on job search methods, migration, attitudes towards work, educational and occupational aspirations and expectations, school discipline, self-esteem, child care, drug and alcohol use, delinquency, and time use.

Finally, NLSY respondents have been the subject of a number of special surveys, the High School and Transcript Surveys conducted for the National Center for Research in Vocational Education, the Profile of American Youth - ASVAB administration sponsored by the U.S. Department of Defense, and the NICHD-sponsored battery of cognitive, socio-emotional, and physiological assessments administered to the children of NLSY female respondents.

The Center creates certain variables which are frequently used by researchers and/or difficult to construct. These created variables include various employment, education, income, geographic and interview-specific variables. Many of these summary variables are available on the created Merged Child-Mother file. These include (1) total net family income, (2) family poverty status; (3) highest grade completed; (4) marital status (collapsed); (5) employment status recode; (6) region of current residence; (7) school enrollment status; (8) whether current residence is urban/rural; and (9) whether current residence is in an SMSA. Derivations for certain of these mother-based variables are provided within the attachments and appendices of the NLSY main Youth documentation set.

Administration of the NLSY

Responsibility for the administration of both the NLSY main survey and child survey has been shared by The Center for Human Resource Research at The Ohio State University and NORC (formerly the National Opinion Research Center) at the University of Chicago. CHRR maintains essential responsibility for design of the survey instruments, data evaluation, some limited report preparation, and data dissemination. Sample design and field work are the principal responsibility of NORC.

Purpose of the Child Handbook

This Handbook is intended both for experienced NLSY users who need specific information about the child data file as well as for first time NLSY users who wish to access the child data. This latter group is encouraged to carefully examine appropriate sections of the current *NLS Handbook* concomitant with their utilization of this

Handbook. While this volume briefly describes the entire NLSY data set, its primary purpose is to fully describe and document the child data files, and, in particular, the child assessment data.

In producing this Handbook, the authors have tried to remain cognizant of two issues. First, the child data files represent an initiation to the NLSY for many users, who at least in some instances, have not previously used large data files. Second, many users may prefer to read only certain parts of the Handbook. For these reasons, we have tried to assume as little prior knowledge about the data set as possible. For this reason, readers who read several sections may note some repetition of material. Because we are sensitive to the fact that many specialized but new users will use this Handbook, there are many instances where basic description and discussion may appear redundant to one who reads several sections. To avoid excessive repetition, the Handbook includes considerable cross-references, referring a user to disparate but related materials.

The Handbook has several objectives. First, it describes the child data collection procedures in some detail, emphasizing the continuing close linkages between NORC, the data collector, the Center for Human Resource Research, which prepares the public use materials, and NICHD, who not only has funded this data collection, but also has provided major input into all aspects of the process.

The remaining sections of the Handbook describe in some detail the nature of the child sample, the child data files available, and the specifics of the child assessments included in the 1986 survey round. Any researcher planning to use these data is strongly encouraged to read Section 3 on sampling issues and constraints. The description of each assessment is accompanied by an explanation of how to access a particular assessment. A discussion of particular data caveats is followed by information on available outside resource documents as well as limited internal analyses that highlight the strengths and limitations of each assessment. This volume includes a variety of statistical materials which should help prospective users make decisions about whether these data are appropriate for meeting their research objectives. Appendix A provides a variety of detailed tabulations that illustrate how the assessment data are linked with several basic demographic characteristics -- the race/ethnicity of the children, their mother's educational attainment and their mother's age at their birth. These Appendix tables will also assist potential users in determining if there are sufficient sample cases for meeting their particular research objective.

In summary, the Child Handbook serves as an essential users' manual and reference document for anyone who plans to use the NLSY children's data. The authors strongly suggest that this Handbook should be used in conjunction with a variety of other materials including the *NLS Handbook*, the interview schedules used in the field for children and mothers, and the NLSY public user documentation. These items complement each other and, in total, represent the appropriate and essential package of materials for researchers planning to use these data.

Organization of the Handbook

The Handbook is organized into several major sections:

Section 2 provides technical information on survey design, field work, sample representativeness, and the data processing and cleaning procedures used in creating the NLSY Child data.

Section 3 describes the NLSY mother and child samples in some detail, highlighting the strengths and limitations of the data set.

Section 4 briefly describes the two child data files and the variety of behavioral and attitudinal data for the children and their families which are available on the Merged Child-Mother data file.

Section 5 focuses on the nature and quality of the 1986 Child Assessment variables and briefly describes the second round of child data collected in 1988.

Section 6 summarizes the NLSY child data files currently available to the public and provides cost and ordering information. For researchers actively involved in utilizing the data, the major characteristics of the data files and guidelines for data management are presented.

Section 7 describes the key pieces of NLSY Child and main Youth documentation which are provided to tape purchasers as well as to other researchers exploring the applicability of the data. Ordering information and a "Quick Reference Guide to NLSY Documentation" are included. Finally, Section 8 describes NLS public users services available.

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NLSY CHILD SURVEY PROCEDURES

Survey Design

Instrument Development

Development of the 1986 Child Assessment instruments began in the summer of 1985. The Center for Human Resource Research assumed overall responsibility for selection, design, and adaptation of the Child Assessments. Close collaboration between NORC and the Center began at this early stage on such issues as placement and formatting of questions, survey timing, and special data collection considerations such as confidentiality, child-interviewer rapport, and testing conditions. On a continuing basis, NICHD also provided input to this process. Advice on question inclusion as well as review of the draft survey instrument was sought by the Center from the various funding agencies, a technical advisory board (see Table 1), and designers of the original instruments.

By August 1985, a preliminary group of assessments had been selected and compiled into two booklets intended as supplements to the main NLSY questionnaire. The set of measures included questions on health and home environment for all children, age-appropriate cognitive assessments, a basic achievement battery, a self-competence scale for school age children, and instruments designed to measure the temperament and the motor and social development of younger children. Four of the assessments were formatted for mothers to self administer, and the remainder were designed for interviewer administration and observation.

In mid-August 1985 a preliminary pretest of the draft child instrument was conducted in Chicago at NORC. Two experienced NLSY field interviewers were given a copy of the draft instrument to review prior to trying it out with several children, ranging from two to eleven years of age, whose parents were employees at NORC. The mother of a five month old was also recruited to take the Mother's Supplement. NORC staff and the Chicago district field manager spent two days observing and video taping these two interviewers. To allow for maximum practice for both interviewers, some sessions were conducted simultaneously and not taped, but every interview was observed. Since the selection of reading and math instruments to be utilized had not yet been finalized, no reading assessment was administered and the Test of Mathematical Abilities (TOMA) was used to measure math performance.

Based on the results of these two days, a special Child Assessment training program was developed to be used with five field interviewers chosen for the main NLSY Survey 1986 Pretest. The training of these interviewers was conducted by the NORC Chicago district field manager and NORC survey staff.

The Child Pretest

A second pretest of the Child survey instruments was conducted by NORC in late August 1985, utilizing a national sample of respondents selected for pretesting the main NLSY. Conducted at two sites with experienced NLSY interviewers, the pretest served to test questionnaire wording, to pinpoint items that posed problems for either the respondents or the interviewers, and to time the various sections of the instruments.

Field observations of the interviewers were made by district field managers and NORC staff. As one might expect, not all interviewers were suited to the special requirements of administering assessments to children. The number of new tasks and the need for certain personal attributes and personality traits suggested that the interviewing of children was inappropriate for even some very seasoned interviewers.

The pretest revealed some unexpected difficulties posed by this special assessment situation. One mother worried that the interviewer and observer would report her to the authorities for child abuse or neglect because she allowed her infant to cry after the baby had been put down to take a nap. A black mother suggested that her child seemed frightened of the interviewer and observer because of limited prior exposure to whites. These incidents highlighted the need for a comprehensive menu of methods for building rapport with the child, dealing with distractions, gaining parental cooperation, administering the assessment materials smoothly, deciding how much persistence was appropriate to gain the child's cooperation, and gauging respondent burden.

Following the pretest, staff from the Center, NORC personnel, and representatives of the various funding agencies met in September to review the NLSY child survey instruments, analyze the response frequencies for selected questions, and discuss problems encountered by both the respondents and interviewers. Subsequent to this debriefing, modifications to the instruments and administrative procedures were made by NORC and the final package forwarded to the Center for Human Resource Research for review.

Final Instrument Design

Two special survey schedules, the Mother Supplement and the Child Supplement, were used to administer the assessments to the children of NLSY mothers. The following is a brief outline of the contents of each instrument and the interviewing aids used in the field. Detailed descriptions of the nature of the child assessment instruments and the criteria used in their selection can be found in Section 5 of this Handbook. Anyone interested in all the data collection instruments used in conducting the NLSY main survey should consult the current *NLS Handbook*.

Mother Supplement.

The Mother Supplement was designed to be completed by the mother or guardian for each child prior to or during the administration of the Child Supplement. Interviewers immediately accommodated any respondent who indicated a preference for having the supplement administered by the interviewer. The Mother Supplement includes the following four assessments:

(1) The HOME - items from the HOME (Home Observation for Measurement of the Environment) Inventory, developed by Bradley and Caldwell, which contains three age-specific versions of a set of scales designed to measure the nature and quality of the child's home environment.

(2) How My Child Usually Acts - items from Rothbart's Infant Behavior Questionnaire, Kagan's Compliance Scale and other items from Campos, which combine to form a set of maternal-report scales measuring temperament or behavioral style over the past two week period for each child under age seven.

(3) Motor and Social Development - items drawn from Poe, Bayley, Gesell, and the Denver Developmental Screening Test, which measure various milestones in the areas of motor-social-cognitive development for children under age four.

(4) Behavior Problem Index - items from Zill and Peterson's adaptation of the Child Behavior Checklist, developed by Achenbach and Edelbrock, which elicit mother ratings of children four years of age or older in such areas of problem behavior as hyperactivity, anxiety, dependency, depression, and aggressiveness.

Child Supplement.

The Child Supplement collected general and health-related background information from the mother of each child, responses from the children to items from nine additional assessment instruments, interviewer evaluations of the testing conditions, and interviewer observations of the child's home environment. The supplement contains the following sections:

(1) The Child Background section - identifying information (age, sex, grade in school) from the mother of each child. The first page of the supplement refers to child ID's drawn from the Children's Record Form (CRF), an NLSY main survey interviewing aid containing information on the biological (Part A) and nonbiological (i.e., adopted or step-children listed in Part B) children of the respondent. The CRF has been used since the 1985 surveys to: (1) provide identification numbers, names, dates of birth, sex, deceased/adopted status for each child; and (2) identify special sections of the questionnaire (i.e., immunization, feeding, etc.) which need to be administered for particular children. A sample Children's Record Form can be found in the NLSY main survey Interviewer's Reference Manuals, a special series in the NLSY documentation (see Section 7 of this Handbook). Information from the Children's

Record Forms can be found within two files (CRFBIO and CRFNBIO) on the NLSY main tape. If someone other than the child's mother answered the questions in the first sections of the Child Supplement, interviewers were instructed to record information about this "caretaker" on the concluding page of the supplement. A Caretaker Locating Form was also used by interviewers, as they administered the main questionnaire to the mother, to locate biological children who were living outside the mother's household at the time of the 1986 interview. The form lists the child's usual residence distance from mother's household and specific information on the child's current address. While every effort was made to assess these children, the information on the locating form was not data entered.

(2) The Child Health section - information from the mother on the child's health limitations, accidents and injuries, medical treatment in the last twelve months, health insurance coverage, as well as measures of the child's height and weight at the time of interview.

(3) Parts of the Body - ten items, developed by Kagan, which measure the ability of children aged one or two to identify various parts of their bodies.

(4) Memory for Location - developed by Kagan, which measures the ability of children eight months of age through three years to remember the location of an object which was subsequently hidden from view.

(5) McCarthy Verbal Memory Scale - a subtest of the McCarthy, (Psychological Corporation), which assesses short-term verbal memory of children aged three through six years to remember words, sentences, or major concepts from a short story.

(6) What I Am Like - two scales from Harter's Self Perception Profile for Children, which measure perceived self-competence in the academic skill domain and sense of general self-worth for children aged eight and above.

(7) Memory for Digit Span - a component of the revised Wechsler Intelligence Scale for Children (Psychological Corporation), which assesses the ability of children seven years of age and older to remember and repeat numbers sequentially in forward and reverse order.

(8) The Peabody Individual Achievement Test (PIAT) Math subtest - (American Guidance Service), a wide-range measure of achievement in mathematics for children with a PPVT age of five years or older. The adaptation of the administration form in the Child Supplement was accompanied by the standard PIAT test materials contained in Volume I of the PIAT Easel-Kit.

(9) The PIAT Reading Recognition and Reading Comprehension subtests - (American Guidance Service), which assess the attained reading knowledge of children with a PPVT age of five and older. The item format in the Child Supplement supplanted the standard PIAT record booklet but interviewers used Volumes I and II of the official Easel-Kit which contain the official item plates and instructions for administration.

(10) The PPVT-R (Form L) - (Peabody Picture Vocabulary Test - Revised, American Guidance Service), used to measure the hearing vocabulary knowledge of children whose PPVT age was three and above. As with the PIATs, children were shown the official PPVT item plates and their responses were recorded in the Child Supplement.

(11) The section on Interviewer Evaluation of Testing Conditions was used to gauge the attitude of the child toward testing, the child's general physical condition, and whether there were any events that interfered with assessment or caused premature termination of the session.

(12) The Interviewer Observations of the Home Environment contained a subset of all the HOME items selected for administration, most of which were included as maternal report items in Section 1 of the Mother Supplement.

The following 1986 Child assessment instruments were translated into Spanish:

(1) the entire Mother Supplement

(2) the following sections of the Child Supplement:

Section 1 - Child Background (mother report)

Section 2 - Child Health (mother report)

Section 3 - Parts of the Body

Section 4 - Memory for Location

Section 6 - What I am Like

Section 7 - Memory for Digit Span

Interviewer Selection

In the fall of 1985 a staff of trainers for the Child survey was selected from the ranks of NORC divisional field managers and upper level field managers by NORC's Office of Field Communication and Management (OFC&M). Field managers who were involved in the pretest training, observations and meetings with the OFC&M liaison were included in the selection process. These trainers were brought to the Chicago office for a concentrated three day session to train them in the techniques of administering the measurements to be included in the Child Study.

NORC attempted, to the fullest extent possible, to use interviewers with prior experience on the NLSY or on comparable surveys. Interviewers who had worked successfully on previous rounds of the NLSY and who were deemed to have the ability to work well with children of various ages were given first consideration for the Child Study. When it was necessary to hire new interviewers for the project, thought was given to the prospect's ability and desire to work with children. Questions were incorporated into the personal interview with applicants to help determine aptitude in this area. If, during training, it became evident that an interviewer might experience

difficulty in the field, the interviewer was shifted from the Child portion of the study. Field staff selecting interviewers for the Child Study had all attended the Trainers' Training session so they were familiar with what was expected of a Child Interviewer. As with recruitment for any NORC study, hiring for the Child Study was conducted by the interviewers' Administrative Supervisor, the person most familiar with an interviewer's skills, work habits and personality.

Interviewer Training

Training sessions were held at eight sites around the country. These personalized small group sessions were geared toward developing child interviewing skills, instructing attendees on the use of the Child study instruments, and reviewing NORC's administrative procedures and policies. Interviewers received a training kit of home-study materials for review prior to the group sessions.

Each interviewer training session, which lasted two and one-half days, was run by a head trainer and observed by staff from the NORC central office and CHRR. The sessions began with an overview of the study, general field procedures, and a taped lecture on establishing rapport and maintaining the attention of children of various ages. Detailed instructions on the administration of each assessment followed. Video tapes were used to provide models of the procedures, including footage supplied by Kagan of him administering the Memory for Location assessment. Pairs of interviewers participated in "mocks," scripted exercises in which the trainees took turns playing the roles of child and test administrator. Large group discussion followed each set of mocks so that interviewers had an opportunity to check their administration and scoring procedures and to ask questions. The training session concluded with a set of exercises that were scored by NORC to assess the degree to which the interviewers had mastered the testing procedures. As discussed later in this section, (see Data Quality Control), interviewers were also required to tape and submit their first actual child interviews to the NORC central office for a complete case edit.

Approximately two hundred people were trained as child interviewers. Part way into the field period, additional interviewers assigned to the main study who showed excellent field performance were trained and added to the Child Study pool. Some interviewers originally selected as Child interviewers did not make it through the rigors of training and others self-selected out.

Field Procedures

Interview Schedule

The child interviews were conducted between February and July of 1986. While interviewers attempted to interview the mother and her children on the same day, the length of the main interview and the number of children in the household often required scheduling one or more child cases for separate days. Sometimes a mother would have time to complete the Mother Supplement but would request that the assessments contained in the Child Supplement be administered on another day. Such scheduling occasionally meant that the Child Supplement assessment date did not match the Mother Supplement assessment date. However, a difference in the age of the child at each assessment date rarely occurred. Researchers conducting research on topics where time periods are critical should carefully examine the reference period of variables tied to the mother's interview dates as well as the actual child assessment dates. This issue is considered more extensively in Section 5.

Interview Methods

During each survey round, NORC attempts to reach all respondents within the active samples. No respondents are excluded from locator efforts with the exception of respondents who are known to have died. Thus, the permanent NLSY sample designated for interviewing during the 1986 interview year consisted of all civilian respondents who were interviewed in the base year and who were alive at the survey date.

Respondents in the NLSY reside in each of the fifty states, including the District of Columbia as well as countries abroad. Locating respondents is a coordinated effort of NORC's central office, its locating shop, and local level field staff. Prior to fielding a survey round, NORC's central office sends a short, informative "locator letter" to each respondent reminding the respondent of the upcoming interview and confirming the respondent's current address and phone number. Female respondents known to be mothers as of 1986 were sent a special letter that introduced the new Child data collection effort and briefly explained the assessments. In addition to its comprehensive locating efforts, NORC makes every effort to convert initial respondent refusals to completed interviews. A detailed discussion of NORC's locating and conversion methods can be found in the current *NLS Handbook.*

In many cases, mothers and their children were interviewed by the same individual who had interviewed the mother at least once and sometimes several times prior to the 1986 interview. While personal interview was the primary contact method used for the 1986 NLSY survey, it was not the exclusive method. Telephone contact occurred under certain circumstances where the respondent resided in a remote area or field staff determined that phone contact was the preferred method of interviewing. During the 1986 personal interviews, 7 percent of the main NLSY

sample was interviewed by phone. A total of 69 mothers were administered Mother Supplements and maternal report sections of the Child Supplement by telephone.

A total of 354 children, eight months or older, were assigned to bilingual interviewers. Of these cases, slightly more than 100 children were actually assessed in Spanish. Nine children were assessed in Spanish while their mothers filled out the Mother Supplement in English. Twenty-four children who were assessed in English have Mother Supplements filled out in Spanish. About 95 children have both a Child Supplement and a Mother Supplement filled out in Spanish. According to the 1986 main NLSY data tape, only 56 mothers were administered the NLSY main questionnaire in Spanish. A variable added to the 1989 release of the Child-Mother file will indicate, for each child, if either or both of the 1986 supplements were administered in Spanish. A variable was added to the 1988 Child instruments indicating if a supplement was administered in English, Spanish, or other language.

The average length of the main 1986 NLSY interview was approximately one hour. The 1986 administration of the child assessments added thirty minutes to the total survey administration time. Each respondent was paid ten dollars upon completion of the main interview. NLSY mothers participating in the 1986 child assessments were paid an additional five dollars for each child assessed. Parents generally exhibited a high level of cooperation during the testing of their children. In fact, NORC interviewers reported that several respondents felt that the Child Assessment study renewed their interest in the NLSY survey as a whole. While some parents found it difficult to remain uninvolved in the testing process, most interviewers administered the assessments with no significant interference. Section 5 of this Handbook provides a more detailed discussion of the Interviewers' evaluation of testing conditions.

NORC's extensive locating methods, its conversion strategy, and its close monitoring of response rates have resulted in an extraordinarily high retention rate for a longitudinal panel of this duration. Table 2 presents NLSY retention rates for the main civilian female sample, for mothers and for children between 1979 and 1986.

Data Quality Control

In order to insure quality control during every phase of the field operation, NORC has two primary mechanisms, case editing and validation, to evaluate the performance of the field staff and to maintain the quality of the data while they were being collected.

Case edits by field supervisors occurred very early in the data collection round to detect any weaknesses overlooked during training. Each interviewer mailed the first two completed cases, accompanied by cassette recordings of the child interviews, to the supervisor and then awaited feedback before proceeding with additional assessments. A 100 percent case edit was conducted on these first cases according to written specifications provided by the project, including criteria for passing and failing the edit. Supervisors contacted those

interviewers who passed the edit and discussed any errors that were found. Those interviewers who failed the edit were notified that, based on the seriousness and extent of the problems, either they would need additional instruction, would need to shift to another assignment, or would not be retained. Interviewers who failed the edit but who were retained on the Child Study were required to submit another round of case edits for review before resuming a full caseload.

During the first several weeks of the field period, all field managers were called by a supervisor or a coder from the central coding shop about the quality of the incoming cases. The first calls pinpointed three types of errors: (1) errors made by a number of interviewers -- these were handled as overview comments; (2) information which needed to be retrieved for a specific interviewer; and (3) any other coding problem a specific interviewer was experiencing. Subsequent calls included interviewer-specific problems to the field manager, district field manager, and central office supervisor. Copies of the overview comments were mailed to the interviewers and to CHRR staff.

Validation, another process for monitoring the performance of interviewers, is used by NORC to: (1) certify that data have been accurately, reliably, and professionally collected; and to (2) confirm that interviewers are completing cases as reported with the correct respondent. NORC conducted call backs on a random sample of about 15 percent of all NLSY cases to verify the date of the interview, the duration of the interview, and the level of accuracy with which selected information was obtained and recorded. Female respondents with at least one biological child were asked about the number, age, and residence of their children, whether the children were assessed and approximately how much time the interviewer spent with each child. The respondent was also given an opportunity to offer comments or criticism about her children's participation in the data collection effort. Once the case validation was completed, NORC's staff assessed the results of the call to determine whether any problem or irregularity appeared.

Data Processing

As child cases arrived at the NORC central office, they were directed through a controlled pattern of data reduction steps designed to produce clean machine-readable data. Processing began with confirmation that all required child instruments and administrative forms were included with the case and that each item contained matching case identification numbers. All documents for each case were placed in a labeled file jacket and batched for routing to the coding department. Those cases randomly selected for validation were specially marked for priority handling. The following steps were conducted for each case: coding, keying, cleaning, hardcopy storage in the NLSY Library, and finally the creation of a machine-readable datafile.

Coding and Editing

To prepare each questionnaire for data entry, a specially trained team of eight coders examined all case documents and applied a series of editing conventions, developed in conjunction with CHRR personnel. Since the Mother Supplement was largely a maternal self report, there were some inadvertent multiple answers to questions that required mutually exclusive responses. If a mother marked two adjacent codes on scaled items or placed a mark equidistant between two codes, coders chose a response by flipping a coin. If a mark appeared on a line between codes, coders circled the one nearest to the mark. All questions with multiple responses were logged with the CASEID, the location of the question, and a brief description of the responses. This information was later transferred to CHRR with the hard copy child instruments. Coders made hard copies of all question verbatims which allowed later refinement by CHRR of the child health limitation codes in Section 2 of the Child Supplement and the HOME discipline responses from the Mother Supplement.

Four coders were given special training in the scoring of the story section (Part C) of the McCarthy Verbal Memory subtest in the Child Supplement. Using the circled concepts and added notations made by interviewers on the "idea sheet" (page CS-28), they scored the story, according to the McCarthy Manual, with the codes provided on the following page. While the Child Supplement was originally printed with space for interviewers to enter the total Part C score (Q.9 at the bottom of page CS-28), they were instructed to ignore this question and leave all scoring of the story to the central coding staff.

During the case edit, coders also flagged any missing or inconsistent data on critical items that were observed in the supplements. A description of the retrieval errors and the corresponding hardcopy questionnaire were forwarded to NORC's retrieval shop for further processing.

Data Retrieval

The need for retrievals on critical items in the Child data was quite low. Obviously children could not be recontacted to retrieve missing assessment responses and mothers could not be expected to supply information on isolated missing assessment items via telephone. NORC focused their retrieval efforts on missing or inconsistent child age and date of birth data, most of which they were able to resolve using in-house sources of information.

Data Entry

All information filled in by the interviewer was data entered exactly as it was found in the Child instruments. Ten percent of the cases were 100 percent verified, that is, data were double entered, compared, and checked against hard copy when discrepancies were found. A special program was run against entered data to: (1)

make valid value and range checks, (2) perform logic checks or simple arithmetic checks, (3) flag important missing items, and (4) avoid entry of skipped fields. These data quality checks helped to prevent the entry of invalid values and to identify earlier errors made by interviewers and/or coders.

3

NLSY MOTHER AND CHILD SAMPLES

This Section of the Handbook describes the sample of NLSY mothers and their children. Particular emphasis is given to sampling constraints imposed by respondent characteristics and attrition. The development of child sampling weights and their application are also discussed.

Sampling Constraints

Anyone using the NLSY child data needs to be cognizant of three sampling-related issues. First, between the 1979 and 1986 interview rounds, some of the children attrited from the sample because their mothers were attriters. These children are considered attriters *regardless of whether or not their mother left the sample before or after they were born.* In addition, there is a modest number of children of female respondents who were not tested (on one or more assessments) in 1986 even though their mothers were interviewed.[1]

Second, and of most fundamental importance, any researcher using this data set must be continually conscious of the fact the children are *not* representative of a full cross-section of American children. When appropriate weights are applied to the sample, the children are approximately typical of children who have been born to a nationally representative sample of American women who were twenty-one to twenty-eight years of age on January 1, 1986. Thus, they over-represent children who have been born to younger mothers, less educated mothers, and minority mothers. In an approximate sense, they are perhaps representative of the first 40 percent of childbearing to a reasonably contemporary cohort of American women. This assertion is only approximate because: (1) it is uncertain how many children these women will ultimately have, and (2) fertility preferences may change between this cohort of women and younger women approaching adulthood at the present time. Regarding the "representativeness" of these mothers (and children), with each successive survey round they become increasingly representative of a full cross-section of American mothers, since they will have completed increasingly larger proportions of their childbearing. Ultimately, if they were to continue to be interviewed until 2015, the children born would be fully representative of the children of *that cohort* of women, as the youngest woman in the cohort would have reached age fifty. Of course, by then, it could well be that the women and their children might be very atypical of what will then (in 2015) represent a typical American childbearing pattern!

1. Conversely, there are a handful of children - twelve - who were assessed even though their mothers were not interviewed!

The third major sampling issue to keep in mind is that unless one uses an appropriate population weight (available on the Merged Child-Mother File as C166.) the NLSY is not even representative of children who have been born to women aged twenty-one to twenty-eight. This is because the original sample included a significant over-representation of black, Hispanic and economically disadvantaged white women. Thus, unless an adjustment is made, the 1986 NLSY child sample includes a substantial over-representation of black, Hispanic and economically disadvantaged white children compared with what one would expect to find if one *randomly* sampled the children of a cross-section of American women between the ages of twenty-one and twenty-eight. Minority and disadvantaged women were deliberately over-sampled back in 1979 so that the overall NLSY sample would include sufficiently large numbers of all kinds of women so as to permit statistically reliable racial, ethnic and socioeconomic comparisons. Of course, the major significance of this for the child sample is that it contains relatively large numbers of black, Hispanic, economically disadvantaged white and other white children for careful in-depth analyses. This over-sampling, however, means that researchers who wish to make statements about these children implying representativeness of any kind should use the child sampling weight. Essentially, this weight adjusts the mix of children to make them a representative cross-section of children born to a nationally representative sample of American women age twenty-one to twenty-eight on January 1, 1986. It adjusts the sample cases both for the minority and disadvantaged white overrepresentation as well as for overall sample attrition between 1979 and 1986. The child sampling weight does *not* adjust for selective non-response on the various child assessments.

Sample Attrition

Table 2 highlights the patterning of maternal and child attrition between 1979 and 1986. In 1986, interviews were completed with 92.7 percent of the original 5828 civilian female respondents with only relatively modest differences in attrition between the various racial/ethnic groups. It should be noted that the original NLSY sample also included about 400 women who were in the military in 1979. This supplementary military sample was discontinued after the 1984 survey round.

Of the original 5828 women, 3053 were identified as having had a child by the 1986 survey. Of these 3053, 143 or less than 5 percent, attrited from the sample between 1979 and 1986 *after* they were known to have had a child. These 3053 mothers are known to have had 5466 children by 1986 and the 2910 mothers interviewed in 1986 have had 5236 children. Thus, the 143 mothers who are known to have left the sample had 230 children by the time they attrited. It should be noted that not only will some of these known mothers have had additional children after they left the sample but also, undoubtedly some of the 281 non-mothers who attrited prior to 1986 had children subsequent to leaving the sample. The sampling weight adjusts for both these kinds of attrition.

Finally, it should be noted that while the women (who were civilians in 1986) interviewed in 1986 had born 5236 children, only 4953 children were assessed. This assessment completion rate differs slightly between white, black and Hispanic children.[2] The sampling weight adjusts for assessment non-response. The sampling weight essentially adjusts upward the number of children who were assessed to the total number of children estimated to have been born to the original sample of 5828 women and redistributes the children (by race/ethnicity and social class) such that the sample of children properly represents children born to a representative sample of women twenty-one to twenty-eight years of age on January 1, 1986.

As noted, the sampling weight does not adjust for selective assessment non-completion. This modest assessment attrition is described in detail in Table 3, which shows the proportion of children available and eligible to take each assessment who actually completed and could be scored on the assessment. For example, it may be noted that, overall, 1780 children under the age of three were available (i.e. actually identified as having been born to a woman who was interviewed in 1986) for a HOME assessment, and 1704 or 95.7 percent have a score on this assessment. This completion rate varies across assessments and by race/ethnicity of the child. Because the sampling weight does not adjust for this differential attrition, it is possible that population estimates of numbers or distributions of children completing a particular assessment could be slightly inaccurate.

Whom Do the NLSY Mothers and Children Represent?

As previously emphasized, the NLSY sample includes (when weighted) a representative sample of American mothers twenty-one to twenty-eight years of age on January 1, 1986. The children of these women are representative of American children who have been born to such a sample of women. Thus, as will be demonstrated, the sample includes an over-representation of children born to younger mothers, less educated and disadvantaged mothers, and minority mothers. While the younger children in the sample will have been born to a fairly heterogeneous socioeconomic group of women, the older children will almost all have been born to younger, typically disadvantaged, mothers. For example, since the sample of mothers is essentially twenty-one to twenty-eight years of age, by definition, any child in the sample age nine or over would have been born to a woman less than twenty years of age. This is the major constraint to which any researcher needs to be sensitive. Many of the following tables will clarify these (and related) sample constraints. Table 4 includes a matrix which cross-classifies the age of all the children at the 1986 survey date by their mother's age at the time they were born. It may be seen from this Table, for example, that all 529 children age nine and over in 1986 (and most of the children age eight)

2. The reader may note a modest difference between the 4971 children highlighted in some of these tables and the 4953 referred to in this table. The difference of 18 children represent children of a small number of women who were in the original military sample but who were retained in the "civilian" sample when the military sample was discontinued after the 1984 interview.

were born to teenage mothers. Conversely, from the perspective of using the 1986 child assessment data, there are only small numbers of preschool age (under age five) children who have been born to women under the age of twenty; indeed, of the 1929 children who have been born to teenage mothers, only 461 are under the age of five.

Nonetheless, acknowledging this important caveat, the researcher should be cognizant of the strengths of this data set; it fully represents adolescent childbearing for a contemporary representative cross-section of American women and their children. Secondly, it includes a very large sample of preschool and early school age children born to a nationally representative sample of women in their early and mid-twenties. In addition, as noted, with every passing survey year, the "representativeness" of the mothers and children increases.

Table 5 provides additional sample detail which will further clarify for the user certain sample strengths and limitations. This table cross-classifies the age of the mother when the child was born by the calendar year of the child's birth. A major strength of the NLSY is that from 1978 forward there is a great depth of personal and family information which has been gathered for these women and, to a lesser extent, their children. Thus, for example, if one wishes to examine in detail the employment or educational experiences of a woman in relation to her child's status, this can be done most effectively for the 1978-1986 period but more sporadically for calendar years prior to 1978 (detailed information is typically available from 1978 onwards because considerable detail is available for the year preceding the initial 1979 interview). In this regard, it may be noted from Table 6 that only 749 of the 5255 children interviewed in 1986 (or as may be seen in Table 9, 689 of the 4971 children assessed in 1986) were born prior to 1978. Thus, for the vast majority of children, those who were born since 1978, essentially continuous longitudinal records exist for their mothers and families for their whole lives. This sample of children includes reasonably large numbers born to mothers age seventeen and over. Conversely, the approximately 700 children born prior to 1978 are disproportionately children born to younger women. Thus, researchers wishing to focus in detail on the maternal and family behaviors of very young mothers *at or around the time of their child's birth* will, in some instances, have less comprehensive employment, education and family information available.

There are several overt implications of having a relatively youthful sample of mothers. As mentioned above, the sample of women with children by 1986 includes a disproportionate number of less educated women. Those who had children at the youngest ages, not surprisingly, possess the least education. As may be seen in Table 7, 35 percent of all the women who have had children by 1986 have completed less than twelve years of school compared with about 10 percent for the non-mothers. Blacks and whites are quite similar in this respect. The proportion who are high school dropouts are even higher for Hispanic women. In addition, the younger the age at the birth of a woman's first child, the greater the likelihood she will not have a high school degree.

Because the earliest childbearing women, who are the least educated, are more likely than other women to have repeated the childbearing process, the linkage between maternal age at birth of child and maternal education is

even more pronounced when examined from a child's perspective. As may be seen in Table 8, a majority of children in the NLSY who have been born to teenage mothers have been born to mothers who have completed less than twelve years of school. For this reason, when using these data for analyses, care needs to be taken to control for education and other related socioeconomic factors. In part the disproportionate number of less educated mothers reflects the fact that the sample over selects on minority and economically disadvantaged mothers and children. However, the primary reason for the large proportion of children with less educated mothers reflects the reality of the sample. Any nationally representative sample of younger mothers will include a large proportion who are disadvantaged and less educated.

Parallelling these statistics by age of mother at the birth of the child are corresponding sample estimates which indicate maternal educational attainment in relation to the ages of the children in 1986, a particularly important attribute since it links directly with assessments the children were given in 1986. As may be seen in Table 9, the educational level of a child's mother becomes progressively lower as one moves from younger to older children in the NLSY sample in 1986. This, of course, largely reflects the fact that the oldest children, on average, were born to the youngest, and thus least educated, mothers. Parallel statistics focusing on the mother's AFQT score rather than education may be found in Table 10. Once again, while some of this pattern represents the over-representation of poor and minorities in the unweighted NLSY sample, most of this pattern reflects the fact that the sample of mothers does not fully represent American children or American childbearers -- but rather the earliest 40 percent of childbearing.

From an analytical perspective Table 11 synthesizes some of the major implications of the NLSY sampling constraints. When using the child assessment data for research one must be very careful when comparing child outcomes or even the determinants of child outcomes across children's ages. For example, to compare three and eight year olds with regard to their (standardized) PPVT-R score would be very risky. As may be seen from Table 12, the eight year olds were born to much younger mothers, have mothers with much less education, and have a somewhat different racial/ethnic make-up. When the sample is weighted, these differences are somewhat reduced, but most of the differences still remain. Any child comparison across age groups must be very carefully controlled so as to remove some of these differential influences. Even then, unmeasured differences between children at the different ages may still remain. In general, creating age groupings that are as contiguous as possible will improve the accuracy of cross-age comparisons (or groupings).

The Child Sampling Weights

The child sampling weights used in the 1986 survey of NLSY children are derived by adjusting the 1986 maternal weights for estimated differences in the probability that a child is "interviewed" in 1986. These weights alter

the 1986 sample of NLSY children so as to be representative of the children of a nationally representative sample of women who are 21 to 28 years of age in 1986.

Because there were no appropriate externally available statistics for precisely estimating lifetime fertility for women with selected characteristics who were 21 to 28 years of age in 1986, it was necessary to develop indicators from the NLSY data set itself which permit one to estimate the relation between fertility and attrition. Essentially, this was done by comparing the completed fertility for women (by age and race) who attrited and who had not attrited at the various survey points prior to 1986. For example, we compared 1980 fertility for women who attrited between 1980 and 1981 with women who were still being interviewed in 1981, and so on, up through the 1986 survey round. Using this series of comparative completed fertility estimates, it was possible to develop reasonable estimates of the ratio of attriter to non-attriter fertility as of 1986.

Using these ratios, the number of children the full cohort of women would have had by 1986 could be estimated. This essentially provided an estimate of the number of children and a "completion rate" (by age of child, race and gender) for children who would have been born by the 1986 survey point. The mother's weight is then divided by this completion rate, and this is the weight for each child. If respondents had not attrited, the maternal weight (when applied to each child) would have equalled the child weight.

4

1986 NLSY CHILD DATA DESCRIPTION

The 1986 NLSY child assessment data are available from the CHRR in two forms. The Child Assessment Raw Item File includes all of the assessment material exactly as received from the data collection agency. The Merged Child-Mother File contains selected subsets of the child data including a number of constructed normed and non-normed scores in addition to a variety of maternal and family related information linked to each child.

The 1986 Child Assessment Raw Item File

The Child Assessment Raw Item File contains approximately 1,500 variables or item responses to the various assessment instruments. The 4971 cases on the file reflect only the children assessed in 1986. While the child is the unit of observation, identification numbers of both the child and mother are provided to facilitate linkage with the Merged Child-Mother Data File as well as with other NLSY files. The initial five digits of the first variable on the tape (the child ID in columns 1-7) comprise the mother identification code. Summary assessment scores based on the raw data do not appear on the Child Raw Item File but are provided on the Merged Child-Mother File described below.

The data on the 1986 Child Assessment Raw Item File appear on the tape exactly as collected by NORC and are not always consistent with the assessment data and scores on the Merged Child-Mother File. Data on this latter file have undergone a series of internal consistency checks whereas the data on the Raw Item File have not. Given the many currently undefined uses of the data, it was considered preferable to prepare one file of unchanged assessment data so that individual researchers could have the opportunity to alter the original data in a manner consistent with their needs. There are, however, eleven variables that have been cleaned and added to the end of each case on the Child Assessment Raw Item File: (1) month, day, and year of Mother Supplement assessment date, (2) month, day and year of Child Supplement assessment date, (3) month, day, and year of child date of birth,(4) child age in months at Child Supplement assessment date, and (5) child age in months at Mother Supplement assessment date.

Documentation provided when this file is ordered consists of a codebook that identifies each variable, its question number, and response frequencies as well as copies of the Child Supplement and Mother Supplement interview schedules. Those exploring the applicability of the 1986 child assessments for their research needs can order a Child Assessment Packet comprised of copies of the relevant interview schedules (the Mother and Child

Supplements as well as the main 1986 NLSY questionnaire). A more detailed discussion of the Child Documentation can be found in Section 7 of this Handbook.

The 1986 NLSY Merged Child-Mother Data File

The Merged Child-Mother File combines selected information on mothers and children from the 1979-86 NLSY surveys with the 1986 NLSY child assessment data. The unit of observation in the file is each of the 5,876 biological children ever born to the 3,322 women identified as mothers in the NLS Youth cohort at any survey point between 1979 and 1986. The child sample, when weighted, represents a cross section of children who have been born to a nationally representative sample of women aged 21-28 in 1986.[3]

The Merged data set, which contains approximately 3,400 variables, includes: (1) information on each *child's* family background, family employment and education history, household composition, prenatal and postnatal health care, child care experiences, and selected items and scores from the 1986 child assessment data; as well as (2) information on each *mother's* family of origin, marital history, income and earnings, household composition, health and deviance histories, and attitudes and aspirations. While some information is cross-sectional, many variables create a profile of the child at the date of each of the mother's interviews or at "key points" in the child's life. The following discussion outlines the major categories of variables which can be found in the Merged file. The numbers in parentheses indicate the range of Child reference numbers encompassed by each topic. These Child reference numbers, which appear in the Numeric Index of variables and the Merged Child Codebook, are discussed in greater detail in the section of this Handbook on Documentation.

Key Linkage Variables

(C100. - C138.). These items enable the user to connect the child-mother file with information attached to the mother on the main NLSY tape, the Workhistory tape, the Geocode tape, and the supplementary Fertility tape. These main Youth data files are described briefly in Section 6 and more fully discussed in the *NLS Handbook.*

The key identification codes (C100. - C116.) enable the user to link children with their mother, with other children on the child-mother or raw item files, and with other interviewed female relatives of the child's mother who are respondents on the main NLSY tape. The Child identification code (C100.) is a seven-digit code, unique to each child. The first five digits of the child ID are identical to the mother's ID (C101.). The final two digits, with a few exceptions, reflect the birth order of the child. For example, a child ID of "1267501" means

3. As a cautionary note to users focusing on outcomes other than the child assessment measurements, children not "interviewed" in 1986 are assigned "zero" for their child weight and thus would be dropped out of any weighted 1986 child analyses.

that the child's mother's ID is "12675" and the child was assigned a 2-digit ID of "01" when the birth was first reported by the mother in her own main NLSY interview. While only a very small number of children were initially assigned 2-digit ID's out of birth order, users should rely on variable C155. as the most accurate indicator of birth sequence.

Due to the nature of the original sample design, the NLSY cohort contains multiple respondents from the same household and often from the same family unit. A subset of respondents related to the mothers of the children are identified by variables C108. - C116. on the merged child-mother tape. The ID's for these relatives of the mother were derived from information about other interviewed NLSY respondents contained in variables with reference numbers R1.50 - R1.61 on the NLS Youth main file. As may be seen in Table 12, there are 1395 children with at least one female relative (mother's sister, aunt, or cousin) who is also an NLSY respondent. Of these children, 940 have a least one relative who is an NLSY respondent and who also has children on the child-mother file. In addition, as already noted, many children have siblings who were also assessed. These children have the same mother ID embedded in their own child ID. That is, the first five digits of children who are siblings will be the same. More than 1500 women have at least two children in the NLSY, as may be noted in Table 13.

Mother interview dates (C117. - C133.10) and child ages at each survey date are also included. The user should note that children who were reported deceased or who were not yet born as of a certain interview date were assigned a value of -4 on variables C133.10 - C133.80, age of child at each interview date of mother. However, children deceased as of a particular interview date are *not* excluded from valid values on other similar variables such as C134. - C137., "Is Child Youngest as of the 1982-85 Date of Interview Date of Mother", or any mother-specific data (such as CPS information) tied to interview dates.

Child Background Characteristics

(C150. - C166.). Demographic items for each child include sex, race, date of birth, birth order, date(s) of 1986 assessment, age and grade at the time of the 1986 child assessment, and 1986 sampling weights for mothers and children. Also in this series is a created variable indicating the age of the child's mother at the time of the child's birth (C164.10).

Users should be aware that there are potentially two 1986 assessment dates for each child, one tied to the day the interviewer administered the Child Supplement (C156. - C158.) and one specific to the date the mother answered the questions in the Mother Supplement (C159. - C161.) For various reasons, some children had their Child Supplement administered on a date different from the day their mother filled out the Mother Supplement. For

only a few cases did this difference in schedule result in a child age discrepancy of one month or more. Users controlling for age on specific assessments should choose the administration date appropriate for that test. This is expanded on in Section 5.

The mother's sampling weight for 1986 appears as C165. in the child-mother file documentation. Sampling weights are readjusted for noninterviews each survey year by NORC. For a discussion of the creation of these weights and their application in analysis, the user should consult the section on Survey Methodology in the current *NLS Handbook*. The NLSY Technical Sampling Report and Addendum contain details on the procedures used to select the original Youth samples and information on the weights and standard errors for each survey year. These two documents are available from the CHRR. The 1986 child sampling weight (C166.) is discussed at greater length in Section 3 of this handbook.

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Child's Parental Background & Environment

(C181. - C251.). Characteristics of the child's immediate family environment include mother's race or ethnicity, date of birth and age of mother and mother's spouse(s), age of mother at first birth (C183.1), a measure of maternal intelligence, mother's residence, religious preference and church attendance. The race/ethnicity variable referred to in C150. is based on the 3-category race/ethnicity of the mother which is a created variable on the NLS Youth main tape. This variable is a collapsed version of the more detailed categories in the original sampling type of the mother (C188.) that was coded on the householder's report during initial screening in the fall of 1978. The derivation of the variable that was used to create C150. is documented in the main NLSY codebook with the entry for variable R2147., "Racial/Ethnic Cohort from Screener 79 Int." This variable may differ from recodes based on self-reported ethnicity collected in the 1979 survey (C189.).

The Armed Forces Qualification Test (AFQT) intelligence measure (C217.) was derived from the mother's Profile scores on the Armed Services Vocational Aptitude Battery (ASVAB), administered to NLSY respondents in 1980. The AFQT score is used to determine trainability and general aptitude for enlistment in the Armed Forces. It is computed by summing the raw scores for the following sections of the ASVAB: Section 2 - Arithmetic Reasoning, Section 3 - Word Knowledge, Section 4 - Paragraph Comprehension and one half of the score from Section 5 - Numerical Operations. The NLSY main tape contains thirty-three PROFILES variables including raw scores, scale

scores, and standard errors for each of the subtests, testing sampling weight, test disposition, and high school graduate status at time of testing. The merged Child-Mother tape, however, provides only the composite AFQT score mentioned above and scale scores for the individual sections of the total battery (see C207. - C216.). NLSY Attachment 106 provides general information on the Profiles of American Youth study, technical information on the ASVAB scale scores, an annotated bibliography of publications, and an example of the test scores report. The 1988 *NLS Handbook* also describes the ASVAB data in greater detail.

The religious denomination categories used to code the 1979 religion of mother (C190., C191.) and the 1982 religion variables (C222. - C224.) are listed in NLSY Attachment 103 (available from CHRR).

The derivation of the original variable describing maternal region of residence at each interview date (see C194., C200., C206., C227., C233., C239., C245., C251.) can be found in the main NLSY codebook with the entry for R2164., "Region of Current Residence 1979." Essentially, these variable definitions parallel those used by the U.S. Bureau of the Census.

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Child Sibling Information

(C252. - C281.). The sex and date of birth of each child's siblings as well as spacing in months between births are provided. Note that one set of spacing variables is provided for all children as of the 1986 interview date of the mother, not as of each interview date. Missing values for the spacing variables (C256., C261., C266.,

C271., C276.) differ from those assigned to most other variables in the file. Since each spacing variable is linked to the birth of a particular child, computation of the number of months between one child's birth and a younger sibling results in negative values. Therefore, -1000 is used for children of mothers not interviewed in 1986, -999 for cases with missing date information, and -997 for children with no relevant sibling. Spacing information for children of mothers not interviewed in 1986 is available on the main NLSY data file.

Background of Maternal Family of Origin

(C301. - C369.). These variables describe the ethnicity, education, prior employment, religious background, and residence of the mother's family of origin. Most of this information comes from the 1979 and 1980 interviews.

The codes used to describe the occupations of mother's family of origin (C316., C318., C329., C339.) are defined in NLSY Attachment 3, Industry and Occupation Codes. This compilation includes (1) the 3-digit 1970 Census classifications used to code job and training information as well as occupational aspiration information from the 1979-87 questionnaires and employer supplements, and (2) the 3-digit 1980 Census codes which have been used, beginning with the 1982 survey, to classify the main respondents' most current or most recent job.

Users interested in a detailed breakdown of the religion in which the mother was raised (C354.) should consult Attachment 103 for definitions of the 3-digit codes. An abbreviated version of this information collapsed into nine categories is provided in C353.

References.

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Maternal Marital History

(C400. - C448.). Key variables on the mother's marital status at each interview date are provided as well as month and year of the beginning and end of first and second marriages. These variables enable the user to determine if the child's mother was ever married or ever divorced as well as the status and the number of mother's marriages at key points in the child's life. In addition, variables C3200. - C3313. profile the date and type of up to three marital status transitions reported (since the preceding survey date) at each of the mother's survey

dates. Finally, variables which are referenced by C3350. through C3392. describe the educational, occupational, religious, marital and health background of spouses of the child's mother as of the 1982 interview with the mother. This detailed information was collected only in that survey round.

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Income & Earnings of Mother and Her Spouse

(C470. - C600.). These variables summarize total income, earnings, and benefits received by the mother, her spouse, and family at each interview date. In addition to information on AFDC, child support, food stamps and welfare payments, there is an indicator of family poverty status for each survey year. Earnings were computed by adding all amounts from wages (including military), salary, commissions, and tips. Income combines earnings and any income from farm or nonfarm business, partnership or professional practice with various sources of unearned income. In 1979, respondents under age 18 who were unmarried, not in college and living with parents, were asked to report the following income components as a lump sum: farm, nonfarm business, savings, unemployment insurance and Supplemental Security Income (SSI). From 1980-1982 all respondents were asked about farm or nonfarm business income and savings as a single amount. Following that year, farm and nonfarm business income was reported as a lump sum but all other income components were listed separately. No question about veterans benefits was included in the 1979 schedule. In 1979 and 1980, alimony and child support were reported as a lump sum but broken out separately in subsequent interviews years.

To insure respondent confidentiality, income variables on the NLSY main file with values that exceed particular limits are truncated. Income variables on the Merged Child-Mother reflect these imposed ceilings. For survey years 1979 through 1984, the upper limit on income variables was $75,000, and any amounts exceeding $75,000 were converted to $75,001. For surveys after 1984, the upper limit on income amounts was increased to $100,000 due to inflation and the advancing age of the cohort, and amounts exceeding $100,000 were converted to $100,001.

Users interested in the precise derivation of the series of variables on Total Net Family Income and Family Poverty Status should consult NLSY Appendix 2 (available from CHRR) which provides the code used to create the key income variable for each survey year for the main NLSY file. Since Family Poverty Status for the year prior to the 1979 interview is not available on the NLSY main file, it does not appear on merged child-mother file. It should be noted that the key income variables have relatively high non-response rates reflecting the fact that if any of the income components were not reported on, the overall key variable could not be determined.

Maternal CPS (Current Population Survey) Employment Information

(C627. - C923.). "CPS" characteristics follow the definitions utilized by the U.S. Department of Labor in their monthly employment and unemployment data collection effort - the Current Population Survey. These variables from the Current Population Survey (CPS) section of the NLSY main questionnaire establish current labor force status, i.e. activity during most of the survey week. The following CPS characteristics for each survey week are provided: employment status, hours worked for current/most recent job, occupation, industry, wages, benefits, and tenure. Job search behavior for those unemployed and reasons for not seeking employment for those out of the labor force are provided for all survey years 1979-1986. A series of detailed maternal job characteristics are available only for 1979 and 1982.

The variables in this series referred to as Employment Status Recodes at each interview date are measures of main labor force activity during the survey week and follow official government definitions. NLSY Appendix 1 contains the program statements used each year to create this variable for the NLSY main tape.

As mentioned above in the section on maternal family of origin, the codes used to describe occupation are defined in NLSY Attachment 3, Industry and Occupation Codes. The 3-digit 1970 Census classifications were used to code respondent job information from 1979 to 1981. Beginning with the 1982 survey, 3-digit 1980 Census codes were used to classify a main respondent's most current or most recent job.

The Duncan Index (see C631. etc.) that accompanies the mother's CPS occupation code is a socioeconomic index of occupational status designed to give near optimal reproduction of a set of prestige ratings. All census occupations were assigned scores on the basis of their education and income distributions. The scores may be interpreted either as estimates of prestige ratings or simply as values on a scale of occupational socioeconomic status. The scale of 2-digit values ranges from 0 to 96. Campbell and Parker (1983) describe the Duncan SEI as "a measure designed to provide an optimally weighted composite to occupation-specific income and education such that it correlates maximally with independently obtained measures of occupational prestige. Since Duncan developed the original measure it has been updated using information from the 1970 Census and Siegel's update and extension of the North-Hatt prestige scores (Hauser and Featherman, Appendix B)." ... "The SEI was developed in order to get a single score for all occupations when the computational limits of social research made such a score highly desirable."

The Maternal Job Characteristics variables (C902. - C923.) in this series are based on perceived job characteristics developed by Sims, Szilagyi, and Keller. The Job Characteristics Index (JCI) is an extension of the work first begun by Turner and Lawrence in 1965, which was preceded by an instrument developed by Hackman and

Oldham using what is known as the Job Diagnostic Survey (JDS). Both scales measure job complexity. For details on the text of the NLSY main survey questions that comprise the shortened JCI, consult NLSY Appendix 4 - Job Characteristics Index 1979 and 1982 (available from CHRR).

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Child's Family Employment History

(C455. - C1371.). Created primarily from the NLS main Youth Work History tape, these variables describe the mother's employment activity beginning one year prior to a child's date of birth and ending with the 1986 interview date. The NLSY Work History data file provides a week-by-week longitudinal work record of the labor force attachment of each NLSY respondent from January 1, 1978 through the current survey date. Designed to be used primarily in conjunction with the main NLSY data files, the Work History data tape contains approximately 5,600 variables organized around three primary week-by-week arrays: (1) "A" Array: Labor Force/Military Status Each Week Beginning January 1, 1978; (2) "HOUR" Array: Usual Hours Worked per Week at all Jobs Beginning January 1, 1978; and (3) "DUALJOB" Array: Job Numbers for Respondents Who Worked at More than One Job in Any Week Beginning January 1, 1978. Other variables on the tape include: (1) job-specific information for up to five jobs for each interview year, (2) active military service information, (3) key employment variables for last calendar year and since last interview, and (3) respondent information such as identification code, sampling information,

birth dates, and interview dates. Because the Work History data was revised in 1988, current versions may not match data in the Child-Mother file. Any differences will be minor. The employment variables on the Merged Child-Mother file represent a subset of the total Work History file.

The following variables were extracted from the Work History file and included for each quarter (13-week interval) in the *child's* life: weeks and hours worked, number of jobs held, occupation, industry, whether wages are set by collective bargaining and whether job is government sponsored. The first five variables in the quarterly series refer to all jobs held by a mother, and the next twelve variables provide details on the duration and nature of the "main" job in each quarter, defined as the job at which the mother worked the most hours.

Only the 13-week intervals of a child's life that are complete within the 1/1/78 to 1986 interview date time frame received valid values. For example, children born prior to 1/1/78 were assigned missing values (-4) for all quarters that precede or overlap that date. Children born prior to 1/1/78 can be identified by their value of "0" on C924. on, "Week # of Date of Birth of Child from 1/1/78 to 1986 Interview Date of Mother." Variables related to any quarter that was not complete as of (or followed) the mother's 1986 interview date are also assigned missing values.

Users should note that the NLSY main questionnaire defines respondents who are on vacation, on sick leave, on unpaid leave of less than one month, or on maternity leave of less than 90 days as still attached to an employer. Therefore, a mother with this kind of status would be considered working, even though she was on leave around the time of the birth of a child. For example, such a profile of continuous employment would show up as a "0" (i.e. continuous employment until the birth) or a very low value for variables C925. and C926., which describe the mother's work status before and after a child's birth even though the woman may not have actually been on the job the whole time. *Researchers cannot use these variables for the period close to the birth if their actual concern is real hours of employment immediately before or after the birth.* However, this caveat applies principally to the last quarter before the birth and the first quarter after a birth.

Documentation for the complete NLSY Work History data tape includes: (1) a description of and codes for each variable on the workhistory data tape; (2) a discussion of the PL/I program logic and procedures; (3) a listing of the PL/I program that created the tape; (4) the tape record layout and condescriptives; (5) format specification; and (6) a listing of the variable locations on the 1979-1987 private tape at the Center, with corresponding public reference numbers, file names, and question numbers which will assist the user in identifying the variables used in the Work History program. Users interested in this documentation should consult the section on Special NLSY main file Documentation in the *NLS Handbook.*

Family Education & Competence

(C1400. - C1550.). This series of variables describes the educational background of the child's parents and other adult members of the household at each of the mother's interview dates. Included are maternal enrollment status at survey date and highest grade completed by the mother, her spouse or partner, and other adults in the household at each date of interview.

Selected information on mother's high school absences, class rank and size, and test scores (C1448. - C1465.) were taken from the NLSY High School and Transcript Surveys. Designed to supplement both subjective respondent information on educational experiences from the main survey as well as data from the transcript survey (described below), the 1979 survey of the last secondary school attended gathered information on: each school's grading system, course offerings, dropout rate, student body composition, faculty characteristics and qualifications, as well as respondent scores from a variety of intelligence and aptitude tests such as the Differential Aptitude Test, Stanford-Binet, and Wechsler Intelligence Scale. The 96 variables from this school survey are located within the SCHLSURV file on the NLSY main tape. Beginning in 1980, transcript information was collected for civilian NLSY respondents who were expected to complete high school. Data collected included high school course titles, course descriptions, and final grades for up to 64 courses taken by each surveyed respondent. By the end of the 1983 round, transcript data had been obtained for 77 percent of the NLSY civilian respondents. The differential response rate from item to item on this file was, however, considerable *with only modest percentages, for example, providing test score information.* The full series of 320 transcript variables can be found within the TRANSURV file on the main NLSY tape.

Additional information on both the school and transcript surveys is provided in the NLSY main file documentation item "High School Transcript Survey: Overview and Codebook" which contains background information, copies of the survey instruments, a codebook, and bibliography of resource materials.

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Maternal Household Composition

(C1570. - C1882.). These variables describe the composition of the mother's household at the time of each interview. Variables include number of family members, family units, children and adults present at date of interview. There are also indicators of whether a spouse, partner, mother or father of the child's mother is present as well as the age of each household member under age eighteen. As this information is provided for all survey dates, some variables describe the composition of the mother's household *prior* to the birth of a particular child. Variables referring to whether a spouse is present in the household (C1570., C1611., C1652., C1697., C1738., C1783., C1820., C1857.) are based strictly on the NLSY main household record, not on the marital section of the main questionnaire. The "0" or "no" category for the "spouse present" variables in this series includes responses from both ever married and never married mothers.

Child Residence

(C1940. - C1947.). These variables describe the usual living arrangement of the child at each of the mother's interview dates, i.e., whether child resides with the mother, father or elsewhere. For the years 1979-1981, 1983, and 1985 these variables are constructed from information in the household record which simply indicates whether or not a particular family member is present. Child residence for years 1982, 1984 and 1986 come from the Fertility section of the NLSY main questionnaire. These latter variables provide greater detail on the residence of children not living with their mother. Note that for years 1982-1985, the responses "child lives part time with mother and part time with father or other person" were not available to respondents asked "Where does this child usually live?" In addition, reference numbers C3400. through C3414. define variables which identify for the 1984 through 1986 surveys, for children living with their mother, whether the child's father is alive, whether he is present in the household, and if not, the degree of contact the child has with him.

Child Care

(C1950. - C1996.50 and C3500. - C3678.). The mother-report from the 1986 survey provides the types of current child care arrangements used for each child in the household, the overall family expenditure for current care, and a retrospective of child care experiences during first 3 years of life for all children (of at least 1 year of age) born to the respondent. These are identified by C1950. through C1996.50.

Other childcare information is taken directly from the 1984 and 1985 NLSY main surveys. The variables describe childcare arrangements used in the past four weeks for the youngest child by parents who were either employed, in school, or in training at the survey date. Location and type of primary and secondary care, hours of

use, nature of payment and grandmother utilization are reported in 1984. Location, type, payment, detail on group arrangements, and hypothetical care are available for 1985. In both years, limited information on location and type of care are reported by respondents who are not currently employed but who have an employed spouse. *The retrospective information collected in 1986 and the current childcare information collected between 1984 and 1985 relate to different universes of children and utilize different childcare definitions.* These distinctions are clarified further in Table 14. Additional childcare information was also collected in the 1982 and 1983 NLSY surveys. These data are not included in the merged child-mother file but can be found on the NLSY main survey file.

Maternal Health History

(C2000. - C2057.). These items indicate, as of each survey date, whether the mother has any health conditions that affect her current employment or ability to work. Included are the dates for calculating the duration of limitations on mother's activity. This series of variables also describes maternal hair and eye color (C2040., C2041.), height at various surveys (C2044. - C2047.), weight at various surveys (C2048. - C2051.), date and age at menarche (C2052. - C2054.), date and age at first intercourse (C2055. - C2057.), and self reports of shyness (C2042., C2043.).

The four reports of mother's height are based on reports from the 1981, 1982, 1985, and 1986 Health Section of the main questionnaire. The first report of mother's weight was obtained in 1981, and then again in the 1982, 1983, and 1985 main interview schedules. In addition, a mother's weight at the beginning and end of each pregnancy are also included (C2070.94. through C2070.96.). The menarche and sexual activity variables were constructed from data collected in 1983, 1984, and 1985. Respondents who had experienced intercourse (or menarche) were asked the age at which the event occurred. The interviewer then combined this age information with the mother's birthdate to compute the year in which the event took place. The respondent was then supplied with the year and then asked for the month of occurrence. Users interested in the precise protocol of these questions should consult the Fertility Sections of the appropriate NLSY main questionnaires. The two shyness reports, one retrospective question about shyness at age 6 and the other as an adult, were obtained in 1985. They are constructed as a four-point scale, from extremely shy (1) to extremely outgoing (4).

Child Prenatal Health History

(C2070.10 - C2070.96). Information about mother's health and prenatal care during the pregnancy leading to the child's birth is provided. Variables include degree of alcohol use, smoking, exposure to x-rays, prenatal

visits, mother's weight at the beginning and end of the pregnancy (as well as weight gain), and use of sonograms, amniocentesis, and dietary supplements during pregnancy.

The notes for the prenatal care entries in the 1986 Child-Mother Codebook refer only to the 1984 prenatal care reference numbers from the NLSY main file. This set of reference numbers does not represent the sole source of inputs but rather illustrates the *types* of variables extracted from the mother's 1983-1986 longitudinal record to construct each child's prenatal history. For example, only prenatal care information for the child who was the youngest child as of the 1983 interview was actually reported in that year. In 1984, 1985 and 1986 women were asked about all pregnancies that occurred since the last interview date. In addition, prenatal care for children born prior to 1983 who were not the youngest in 1983 was retrospectively asked in 1986. The x-ray questions (C2070.23 - C2070.27), however, were not asked in the 1986 retrospective prenatal health section or in the 1986 prenatal health update (see pages 10-99 to 10-104 and pages 10-116 to 10-118 of Section 10: Fertility, 1986 NLSY main Survey Questionnaire). In addition, sonogram, amniocentesis, and diet questions (C2070.28 - C2070.93) were not asked in the 1986 prenatal health update (see pages 10-116 to 10-118 of Section 10: Fertility, NLSY main file Survey Questionnaire, 1986). Users should consult specific main questionnaires to better understand which year yielded information for a specific universe of children.

Child Postnatal Health History

(C2076. - C2155.70). Information on gestation, birth weight, infant feeding practices, illnesses and well baby care during the period immediately following birth through the first year of life were taken from the mother's longitudinal record and attached to each child.

Only the 1984 NLSY main file reference numbers are noted in the 1986 Child-Mother documentation for postnatal care variables. As mentioned above in the discussion of prenatal care information, these codebook notes illustrate the types of inputs that were drawn from the mother reports of postnatal care in the 1983-1986 interviews for all children. Again, users should review the Fertility Section of the main questionnaire for each of these years to see when certain questions were asked for specific children of specific ages. For example, while birth weight was reported in 1983 for all children born as of that date, certain feeding questions were applicable only to a subset of children. Feeding questions about solid foods which may have been inappropriate for an infant in 1983, for example, were updated in 1984 or 1985, depending on the developmental stage of the child at each interview date. Users should note that only the subset of immunization questions most comparable across survey years was included in the Merged Child-Mother file. Also, unlike the child illness questions in the

1984-1986 interview schedules, in 1983 illnesses experienced by the youngest child in the first year were only coded if the child had been hospitalized (see Section 10, Q. 40A and B, pages 10-105 of the 1983 NLSY main questionnaire).

Maternal Deviance History

(C2161. - C2392.). This category refers to mother's self-reports of drug use, delinquency, and police contacts from the 1980 survey, substance use and its impact on work from the 1984 schedule, and self-reports of alcohol use from the 1982-85 schedules.

The 1980 NLSY survey contained a special self-report index on respondents' participation in and income from such delinquent and criminal activities as skipping school, alcohol/marijuana use, vandalism, shoplifting, drug dealing, robbery, assault, or gambling during the previous twelve month period. Adapted from previously used self-report delinquency scales, the instrument utilized an expanded response scale to differentiate very highly delinquent youth from occasional participants. A second set of questions measured involvement with the criminal justice system by assessing the extent of police contacts, resulting criminal convictions and sentences (probation, incarceration) received. Nearly all of the 71 variables on illegal activities that are found on the main NLSY tape were extracted and included on the child file. Sections 15 and 16 of the 1980 NLSY main questionnaire and the accompanying confidential "Form J" contain the delinquency and police contact questions. Crowley (1981, 1982) presents various tabulations of these data by sex, race, education and poverty status. Appendices within both reports discuss the development of the index, the specific procedures used to administer the confidential form, issues intrinsic in measuring delinquent behavior and criminal activity, and the consistency of responses to the various delinquency and police contact measures.

The 1982-1985 NLSY main surveys include questions which focus on the development of drinking patterns, consumption of various alcoholic beverages, and the impact of alcohol use on school work and/or job behavior. The complete set of alcohol questions were included on the merged child file (C2192. - C2264., C2355. - C2392. in the child documentation).

In addition, an extensive set of questions on substance use was included in the 1984 main survey. Information was collected on respondents' use of cigarettes and marijuana, as well as illicit and non-prescribed use of amphetamines, barbiturates, tranquilizers, and other drugs. Questions included monthly use of marijuana over the years 1979-1984, lifetime use of marijuana and other illicit drugs, age at first use, and substance abuse on the job. These variables appear as C2265. - C2354. on the merged child file. Some evaluation research on these data, carried out by Mensch and Kandel (1988), suggests some under-reporting, primarily by marginal substance users.

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Maternal Attitudes, Expectations, Aspirations

(C2401. - C2577.). This group of variables includes maternal birth expectations at selected interview dates, knowledge of the world of work in 1979, influence of a significant other on future decisions in 1979, career aspirations, a 4-item subset from the Rotter Scale of locus of control in 1979, the Rosenberg self-esteem scale in 1980, attitudes toward work and school in 1979, women's roles items in 1979 and 1982, and global measures of job satisfaction for all survey years.

The "On Significant Others" section of the 1979 NLSY main questionnaire is the source of the discrete set of nine variables dealing with the attitude of the most influential person in each respondent's life toward certain key career, occupational, residence, and childbearing decisions (C2348. - C2446.). These variables are available for women who were between the ages of 14 and 17 in 1979.

The Rotter Internal-External Locus of Control scale in the 1979 NLSY survey is a 4-item abbreviated version of a 23-item forced choice questionnaire adapted from the 60-item Rotter Adult I-E scale developed by Rotter in 1966. The scale was designed to measure the extent to which individuals believe they have control over their lives through self-motivation or self-determination (internal control) as opposed to the extent that the environment (i.e., chance, fate, luck) controls their lives (external control). The locus of control construct is formulated within the framework of social learning theory. The scale is scored in the external direction, that is, the higher the score, the more external the individual.

In order to score the Rotter scale in the NLSY, one has to generate a 4-point scale for each of the paired items and then sum the scores. For example, the first pair has the following two statements:

1. What happens to me is my own doing. (internal control item)
2. Sometimes I feel that I don't have enough control over the direction my life is taking. (external control item)

Respondents were asked to select one of each of the paired statements and decide if the selected statement was much closer or slightly closer to their opinion of themselves.

The following describes how the scale is constructed:

Internal Control Item		External Control Item	
Much Closer	Slightly Closer	Slightly Closer	Much Closer
1	2	3	4

Each of the 4-paired items is constructed in the same manner as the above example. The values for each item are then summed. Using the above example, the maximum possible score is 16, indicating high external control. The minimum possible score is 4, indicating high internal control.

The summed score on the NLSY abbreviated version correlates well with self-esteem, education, and social class, but the internal consistency of the scale is quite low for the whole Youth cohort (alpha: .36). Separate estimates by race and sex do not yield significantly higher reliability estimates.

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Rosenberg's (1965) 10-item scale was included in the 1980 NLSY main survey to measure respondent's self-esteem. The Rosenberg self-esteem scale was designed to measure the self evaluation that an individual makes and customarily maintains. It describes a degree of approval or disapproval toward oneself (Rosenberg, 1965, p. 5). The scale is short, widely used, and has accumulated evidence of validity and reliability. It contains ten statements of self approval and disapproval with which respondents are asked to strongly agree, agree, disagree or

strongly disagree. It can be scored either as a Guttman scale or according to a Likert format. Items A, B, D, F, G (below) need to be reversed prior to scoring in order for a higher score to designate higher self-esteem. The NLSY 1980 version of the Rosenberg was administered as follows:

Interviewer to respondent: "Now I'm going to read a list of opinions people have about themselves." (HAND CARD T) "After I read each one I want you to tell me how much you agree or disagree with these opinions. (First/next) (READ STATEMENT) Do you strongly agree, agree, disagree, or strongly disagree with this opinion?

		Strongly Agree	Agree	Disagree	Strongly Disagree
A.	I feel that I'm a person of worth, at least on an equal basis with others.	1	2	3	4
B.	I feel that I have a number of good qualities.	1	2	3	4
C.	All in all, I am inclined to feel that I am a failure.	1	2	3	4
D.	I am able to do things as well as most other people.	1	2	3	4
E.	I feel I do not have much to be be proud of.	1	2	3	4
F.	I take a positive attitude toward myself.	1	2	3	4
G.	On the whole, I am satisfied with myself.	1	2	3	4
H.	I wish I could have more respect for myself.	1	2	3	4
I.	I certainly feel useless at times.	1	2	3	4
J.	At times I think I am no good at all.	1	2	3	4

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Wylie, Ruth C. 1979. The Self-Concept Volume 2: Theory and Research on Selected Topics. Lincoln, Nebraska: University of Nebraska Press.

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The 1979 and 1982 NLSY interview schedules included eight attitude items on various dimensions of women's roles. The 5-point items were chosen partly because they had appeared in the original (1960s) NLS younger cohorts and because they have been frequently used and cited in the literature (Mason, et al., 1973, 1975, 1976). Most of the items focus on women's employment. Analysis of single item distributions in the NLSY data indicates that, while most youth exhibited generally nontraditional orientations towards women's roles, there were significant differences in attitudes by race, level of educational expectations, and by their fertility expectations (Mott, 1984). When the items were collapsed into a single scale ranging from 8 to 40, there were persistent differentials in response congruence by age and race.

Research conducted in 1981 on the 1979 NLSY data used an index based on the sum of the responses to the following five of the eight items:

(1) A woman's place is in the home, not in the office or shop,

(2) A wife who carries out her full family responsibilities doesn't have time for outside employment,

(3) The employment of wives leads to more juvenile delinquency,

(4) It is much better for everyone concerned if the man is the achiever outside the home and the woman takes care of the family,

(5) Women are much happier if they stay at home and take care of their children.

Inspection of factor analyses and inter-item correlations showed that the five selected items all correlated well with each other, while the remaining three items were unrelated. Items were rated on a four point scale ranging from strongly agree to strongly disagree, and were summed to form an index ranging in value from 5 to 20 with higher scores indicating more traditional attitudes. Essentially, each of the selected items deals with the conflict between work outside the home and the successful fulfillment of the family roles which women have traditionally held. Inter-item correlations range from .40 to .56. The total five-item scale yields a reliability coefficient of .74. For more detail on the development, measurement properties, and correlates of the traditionality scale in the NLSY data, see Shapiro and Crowley, 1981.

Additional analyses at CHRR used a scale composed of four of the eight items to construct a measure of individuals' sex-role attitudes regarding wives' employment and household responsibilities (Mott, 1984). Selection of the items was based on an initial factor analysis of six employment related women's roles questions appearing on the 1979 NLSY main Survey. A single factor was identified by using principal factoring with iterations. The rotated varimax solution revealed that the four items subsequently scaled loaded reasonably well on this one dimension (.72, .62, .70, .62). Chronbach's reliability α was .765 for the four selected items. Questions were scored from 1-4 (don't knows excluded) and coded so that lower scores reflected more traditional attitudes and higher scores represented more modern or egalitarian types of responses. The items were then summed to create a scale having a theoretical range of 4-16. Listwise deletion was employed in calculating scale values for individual respondents. The scale had a mean of 11.07 and standard deviation equal to 2.42.

References.

Mason, Karen Oppenheim with Daniel R. Denison and Anita J. Schacht. 1975. "Sex-Role Attitude Items and Scales from U.S. Sample Surveys." DHEW Publication No. (ADM) 75-248. Washington, D.C.: U.S. Department of Health, Education and Welfare; Public Health Service; Alcohol, Drug Abuse, and Mental Health Administration.

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Shapiro, David and Joan E. Crowley. 1981. "Aspirations and Expectations for the Future: Education, Work Activity, and Fertility." In Michael E. Borus et al., Pathways to the Future: A Report on the National Longitudinal Survey of Youth Labor Market Experience in 1979. Columbus: The Ohio State University, Center for Human Resource Research.

Included in the 1979-1982 NLSY main surveys are job satisfaction items drawn from the University of Michigan's Quality of Employment Surveys (QES) of 1969, 1973, and 1977. The Survey scale was chosen for use in the NLSY due to its high reliability in applications across a broad cross-section of employed respondents and its ease of administration relative to other job satisfaction scales (Mangione, 1973 and Seashore and Faber, 1975). Eleven items are included for each of the 1979-1982 surveys (C2426. - C2436., C2484. - C2494., C2510. - C2520., C2531. - C2541.). In addition, the file contains a global maternal job satisfaction item for each interview year (C2437., C2495., C2521., C2542., C2567., C2571., C2575., C2577.). A short form of the QES scale developed by Robert Quinn appears to have better scale properties than the single global measure (Quinn and Mangione, 1973). The NLSY questions in 1979-1982 that comprise the 7-item Quinn job satisfaction scale are as follows:

NLSY Main Questionnaire Text	Dimension	Child-Mother Reference Numbers
You are given a chance to do the things you do best.	Challenge	C2426., C2484., C2510., C2531.
The physical surroundings are pleasant.	Comfort	C2427., C2485., C2511., C2532.
The pay is good.	Financial Rewards	C2431., C2489., C2515., C2536.
The job security is good.	Financial Rewards	C2432., C2490., C2516., C2537.
Your co-workers are friendly.	Relations with Co-workers	C2433., C2491., C2517., C2538.
Your supervisor is competent in doing the job.	Resource Adequacy	C2434., C2492., C2518., C2539.
The chances for promotion are good.	Promotion	C2435., C2493., C2519., C2540.

References.

Mangione, T.W. 1973. "The Validity of Job Satisfaction." Doctoral dissertation, The University of Michigan.

Quinn, Robert B. and T.W. Mangione. 1973. "Jobsat '72 and Its Kinfolk - A Brief Manual." Chapter 5 in The 1969-1970 Survey of Working Conditions: Chronicles of an Unfinished Enterprise. Ann Arbor: University of Michigan, Institute for Social Research, Survey Research Center.

Seashore, S. and T. Taber. 1975. "Job Satisfaction Indicators and Their Correlates." American Behavioral Scientist, 18: 333-368.

1986 Child Assessment Measures

(C2641. - C3123.). Assessments of the cognitive, socioemotional and physical development of 4,971 children of the mothers of the NLSY are included. Also provided are measures of the quality of the child's home environment as well as the interviewer ratings of the testing conditions. The assessment measures vary depending on the age of the child. Cognitive materials for the youngest children include a body parts identification, a memory for locations test, and a verbal memory subscale from the McCarthy. The older children have scores from the PIAT Math and Reading subtests, the Peabody Picture Vocabulary Test-Revised, and the memory for digit span subscale of the Wechsler. Assessments that evaluated the social and emotional development of children include temperament scales for children under age seven, a Motor and Social Development Scale for children under age four, the Behavior Problems Index for children four years and older, and a perceived self competence scale for children eight years and older. All individual item responses from the child assessments appear on the merged Child-Mother file, with the exception of the PIAT, PPVT-R, Digit Span, and Verbal Memory. While all HOME items appear in their original form on the merged file, the dichotomous versions of these items used in scoring are not on the tape. Each of these assessments is discussed in detail in the following Section.

5

THE CHILD ASSESSMENTS

This Section of the Handbook has several interrelated objectives. A brief discussion of the criteria utilized in selecting the various assessments is followed by general information essential for all users. Then, each of the child assessments administered in the 1986 NLSY survey round is described in detail. Information is provided about the reliability and validity of the assessments available from other sources. Much of the section is devoted to descriptive analyses of the assessment data, including tabular information relating the distribution of the various outcome scores to a number of child and maternal characteristics. Correlations between the various assessments, internally developed reliability coefficients, and a discussion of potential biases due to selective attrition are also included. Finally, the Section highlights the nuances of the various assessments, some of the data limitations which have become evident and specific information about how to properly access and use the child assessment information.

Criteria for Selecting the 1986 NLSY Child Assessments

The decisions about which child assessments to ask of the children of the female respondents were carefully considered from a number of perspectives. The selections were made jointly by NICHD staff, Ohio State Center for Human Resource Research personnel and a nationally recognized panel of experts from medicine and the social sciences. The members of this panel are listed in Table 1. The assessments finally selected generally met the following criteria.

(1) They were "tried and true" tests which, for the most part, had been extensively used by data collectors in a variety of social, economic and cultural settings. Some had been administered in household settings utilizing interviewing procedures similar to those followed with the NLSY. They were frequently suitable for administration by nontechnical (but otherwise highly qualified) interviewing personnel to a cross-section of middle class and economically disadvantaged whites as well as minority children.

(2) Many of the tests are recognized by the social science community as well-established and well-normed. Available statistics indicate that they are generally highly reliable and valid. Reliable means that if the same individual is repeatedly given the same test, he or she will repeatedly have similar scores. Valid means that the test indeed measures what it purports to measure, and is generally determined by comparing results on the given test with results for the same individual on a different test whose validity has

already been well established. The tests are rated highly in Burroughs *Tests in Print* (Vol. 3, 1983), a widely recognized testing manual which rates all of the major aptitude tests. We have augmented these statistics with additional information garnered from the 1986 survey round.

(3) Most of the tests used are inexpensive to administer, require very little equipment (important for tests to be administered in a home setting), and are relatively short.

(4) The utility and appropriateness of the tests have been considered from both longitudinal and cross-sectional perspectives. First, the participants in the questionnaire development process have carefully ensured that tests are included which cover to the maximum extent feasible the critical cognitive, personality and physical health dimensions at all maturational stages between birth and the early adolescence. Second, every effort has been made to assure that the tests complement each other analytically from a longitudinal perspective. That is, if the study is maintained for several years, there is assurance that developmental inputs at younger ages which are needed to evaluate outcomes at later ages are included in this survey round. Indeed, in this regard, most of these assessments are asked in the 1986 and 1988 survey rounds. Finally, every effort has been made to include basic cognitive and personality scales which can, in a cross-sectional context, be compared across age groups at one point in time (subject, of course, to the caveats, discussed in the sampling section).

(5) None of the tests involve any physical or psychological risk to either the child or any other family member. In all instances, the mother, who is the original sample respondent, was informed about the testing procedures and indeed, in several instances, the questions were addressed directly to the mother. If at any time there was any reticence regarding a procedure by either a child or the respondent, interviewers were instructed to cease testing immediately.

General User Information

Child Data Tapes Available

All of the child assessment information collected in the 1986 survey round is available in its original form on the 1986 Child Assessment Raw Item File. In contrast, the Merged Child-Mother Data File includes summary scores and, in some instances, subscores for the assessments. Where available, it also includes national norms based on the raw scores. Individual item scores for selected assessments are also included on the merged file. The following criteria were used to determine which individual item scores to include on the merged file: (1) the total scores were based on recodes of the individual items and individual researchers might prefer a different recode, or (2) the individual items may be of intrinsic substantive value on their own. Also included in this

merged file are the interviewer remarks associated with each assessment as well as "flag" items for several of the assessments indicating where prorations were necessary or where alternate scoring schemes were considered. Scoring procedures will be specified below in relation to the individual assessments. Researchers who plan to extensively use a particular assessment for which the individual items are not provided on the merged file are encouraged to acquire the raw item child file and carefully examine the individual response patterns before proceeding with their research.

CHRR staff have examined the assessment data carefully while preparing the summary scores and the public use tapes. Some of the insights gained from this process are highlighted in this document. However, researchers who detect what appear to be significant data problems with the assessments are encouraged to contact Frank Mott or Paula Baker by phone (614-263-1682) or mail, describing the nature of the problem. Should a problem be detected, we would immediately inform tape purchasers and publicize the issue in our quarterly newsletter, *NLS Update* or via NLSERVE, the Center's BITNET file server. Indeed, both these services, described in detail in Section 8, have already been used as vehicles to publicize some data issues. We also encourage users to forward to us copies of any reliability or validity research they carry out on these assessments. We will assure that such information is expeditiously made available to the NLSY research community.

The Importance of Child's Age: A Cautionary Note

In all instances, the specific assessments and questions which a child completed depended on the child's age and, clearly, the responses need to be interpreted in relationship to that age. As indicated above, where national age-specific norms are available, they have been included on the public tape. In several instances, however, appropriate national norms were not available. In these instances, only non-normalized "raw scores" are included on the file. The user is reminded that, from an analytical perspective, combining raw scores for children at different ages is generally inappropriate. The user might consider several options in order to resolve this problem. First, age-normed standard or percentile scores could be developed, using the NLSY child sample itself as the "normed" population. While this does not represent a perfect solution (reflecting the fact that the NLSY sample of children is *not* a national sample of children born to a full age spectrum of mothers), it is undoubtedly preferable to combining "raw scores" across age groups. It is suggested that, if internal norms are created in this manner, they be used only for combining children who are in fairly contiguous age groups (e.g., age four through six years, or one through three). The child sampling weight (C166.) enables the user to translate the unweighted child population into a sample of children representative of all children who have been born to American women who were 14 through 21 on January 1, 1979. Users developing internal norms should use this child weight variable (C166.). One other option, which would be most appropriate when utilizing multivariate

techniques, would be to include an age variable as a control. This may be an appropriate statistical technique where the non-normalized "raw" score being used includes comparable items for children at different ages. Generally, it is recommended that an age control be included in all multivariate analyses even when using age normed outcomes since in some instances, the normed score distributions may lack complete comparability across ages because of assessment "floor" or "ceiling" effects. This will be discussed further with respect to specific assessment (e.g., see discussions of Memory for Locations and Motor and Social Development).

Generally, although not always, information in relation to a particular child was collected on one day. However, since there were instances where this was not true, the user should use the Mother Supplement child age variable (C163.) when working with assessments in that supplement and the Child Supplement child age variable (C162.) when using assessments in that instrument. These created age variables are measured in terms of attained *months* of age, so users may readily stratify the child sample into whatever age units seem appropriate. The user should note that these attained month variables consider "0" as the first month of life and so on. Thus, for example, the first three years of life would include the zero through thirty-*five* month categories with thirty-five being the thirty-sixth month of life. As a final caveat, the user should note that the Peabody Individual Achievement Tests (PIATs) and the Peabody Picture Vocabulary Test (PPVT) were normed according to slightly different age definitions. In creating a PPVT or PIAT age variable, a child's age is rounded up to the next month if he or she is more than fifteen days through a given attained month as of the survey date (e.g. fifty-six months, sixteen days old becomes fifty-seven months). When using these tests, the user should use the created PPVT age variable (C2817.).

Linking the Child Instruments to the Tape

When questionnaire items are referred to in this document, the relevant "deck" and "column" numbers for that item in the questionnaire are used. Items in the Mother Supplement are prefixed by an MS and Child Supplement items by a CS. Thus, for example, question number 1 in section 1, Part A of the Mother Supplement is identified as MS0127 because: (1) it appears in the Mother Supplement, (2) it is located in "deck 01" (see top of questionnaire page), column numbers 27-28 (see margin). When an item requires more than one column, the first of the columns is used for identification.

The Assessments

The following user and data quality information is ordered according to how the assessments are presented in the 1986 interview schedules beginning with the Mother Supplement assessments and followed by the Child Supplement

assessments. Thus, the first four assessments discussed were addressed to the mother or guardian of the child whereas the remaining assessments were designed to be administered directly to the child. The user should consider this distinction when evaluating any analytical results. A mother's report of her child's behavior or personality may differ in significant but undefined ways from reality based on a variety of conscious or unconscious maternal biases.

Home Observation for Measurement of the Environment - Short Form (HOME-SF)

The Home Observation for Measurement of the Environment - Short Form (HOME-SF) is the primary measure of the quality of the child's home environment included in the NLSY child survey. It is a modification of the HOME Inventory (Caldwell and Bradley, 1984), a unique observational measure of the quality of the cognitive stimulation and emotional support provided the child by his or her family. The HOME-SF is about half as long as the HOME Inventory, an adaptation necessitated by survey time and cost constraints; nearly all of its items are reworded from the HOME Inventory. More than half of the HOME-SF's items are multichotomous maternal self-reports reworded from the HOME Inventory's dichotomous observer-ratings. Like the HOME Inventory, three age-specific versions were used, each translated into Spanish. The HOME-SF's items and scales are generally comparable across age.

Bettye Caldwell authored the Infant Version of the HOME Inventory, and with Robert Bradley, co-authored the Preschool and Elementary Versions. Bradley worked closely with CHRR staff to shorten, modify, and reword the HOME Inventory for use in survey research, making part of it interviewer observation and part maternal self-report. Caldwell provided general advice and consultation. At least three items from each domain of the original HOME were selected for the HOME-SF whenever possible, as well as observer-ratings of cognitive stimulation and particularly the emotional relationship between mother and child. Bradley and Caldwell reviewed and approved the final draft of CHRR's Infant, Preschool, and Elementary HOME-SF versions used in the Mother and Child Supplements of the NLSY-86. They consulted with CHRR staff at professional meetings, exchanged memoranda with CHRR staff, provided a Spanish translation, and supplied CHRR with the relevant psychometric and clinical literature and data on the HOME Inventory.

Specifically, Bradley selected the HOME Inventory items for each of the three versions of the HOME-SF. Items were selected based on reliability coefficients, discrimination indices, validity coefficients, and factor loadings from prior published and unpublished research. Bradley recommended items that are important to the research community -- items which are strong indicators of the home environment's constructs, and comparable across the age-specific versions. He edited the item stems and response alternatives written by CHRR, writing occasional items himself. He decided which items would be dichotomous, which multichotomous, and how they should

be scored. Bradley selected the items for each subscale and with CHRR staff named the subscales. Finally, he suggested procedures used to train the interviewers in their administration of the instrument.

As noted, there are three versions of the HOME-SF, one each for infants (birth through two years), preschool (three through five years), and elementary-aged (six years and older) children. The infant version consists of six categories: maternal emotional and verbal responsivity; maternal acceptance of child's behavior; materials for learning; organization of the environment; maternal involvement; and variety of stimulation. The preschool and elementary versions tap the same dimensions and, in addition, provide a measure of parental modeling of maturity. The specific items included in each of the scales and subscales are specified in the "Using the HOME" section below. In addition, the addended section from the Mother Supplement entitled HOME Score Recodes (see Appendix B) specifies the precise nature of the raw score recoding which was used to score this assessment.

Several of the HOME items required extensive initial recoding in order to fully utilize the verbatim responses originally coded as "other." The HOME-SF Part B contains an item (MS0154-MS0166) concerning mother's response to the child hitting her. The HOME-SF Part C has an item (MS0232-MS0244) concerning mother's response to the child swearing at her. Both items are coded "1" if the parent's response is moderate, defined as without harsh reprisal.

The Part B item contributes to the HOME-SF scale scores only if certain alternatives ("send to room", "talk", "ignore", and "give a chore") are selected and if the "other" alternative is without harsh reprisal -- that is, if a mild reaction is the first response. The Part B item is scored zero if any of the following are selected: "hit", "spank", or the "other" alternative is harsh. Harshness is arbitrarily defined as either extensive or excessive deprivation (time-out longer than two hours; deprivation longer than two days) or physical punishment (firmly grasping the child, blocking the punch, spanking then talking, or talking then spanking).

The Part C item was scored similarly. Yelling back and withdrawal of love, perhaps emotionally harsh, were scored as mild (score of 1) because they are not physical responses. The item is scored zero if "spanking" is selected or if the "other" alternative is excessive (longer than three hours of time-out; longer than three days of deprivation) or if physical means ("eat soap") are the first types of punishment selected.

Of the 94 verbatim responses to Part B, 10 were scored as harsh by CHRR staff in consultation with Bradley. Of the 80 verbatims to Part C, 3 were scored as harsh. Examples of verbatims scored as harsh are "break him up", "spank and ground for two weeks", and "spank then explain why." If the length of time-out was not specified ("send to room") then CHRR and Bradley assumed a moderate amount of time, scoring the item as mild. Other examples of verbatims scored as mild are "never happens", "depends on the situation", "stand in corner until apologizes." A classic mild response (conveying no discipline) was "give him something to eat." A few other verbatims should be noted. One respondent with three children checked hit and commented, "Then say I'm sorry and laugh." Another mother of two checked hit saying, "But not like I'd hit an adult."

Using the HOME Scale.

The HOME is divided into three sections: the first for children under age three, the second for children between the ages of three and five and the third for children age six and over. The Merged Child-Mother File includes the individual HOME unrecoded response items, a total "raw" score, as well as a number of constructed sub-scores. In order to more effectively compress the "raw" information on the merged file, sequentially comparable raw items for the three different age categories are compressed into one tape location. That is, responses for HOME item number one for children who are under three years of age are in the same tape location as responses to HOME item number one for children between three and five years of age and responses to HOME item number one for children six and older, and so on. Thus, a researcher who wishes to examine HOME item number one for children under the age of three only should access reference number C2651.01 on the Merged Child-Mother File, limiting responses to children who are between zero (the first month of life) and thirty-five months (the thirty-sixth month of life) of age on variable C163., the child's age (in months) on the day the Mother Supplement was completed. The precise linkage between the HOME reference numbers and the individual questionnaire item may be found in Table 15.

In order to construct an overall score as well as various subscores for the HOME, all of the individual items were translated into dichotomous zero-one variables and then appropriately summed. The precise recoding which was done for the Mother Supplement components of the scores is specified in the HOME questionnaire attachment (Appendix B) to this document.

Some items used in scoring the HOME are drawn from Section 11 (Interviewer Observations of HOME Environment) of the Child Supplement (pp. CS-65 to CS-68). Some adjustments were made to these items because some interviewers neglected to distinguish between situations where a parent or guardian was present or absent and situations where the parent/guardian was there but the response to the item was "no." On the basis of an examination of the responses to the interviewer remarks in sections 3 through 10, it was often possible to determine whether or not a parent/guardian was present in situations where parental presence status was ambiguous from the HOME interviewer observations. If a parent/guardian was found to be present somewhere in section 3 through 10, but the interviewer observation section items were coded 2 ("not observed"), the 2 response was recoded to 0 ("no"). Since the original HOME items are included on the file, individual users are, of course, free to redefine this (and other) decision rules in whatever manner they feel is most appropriate.

The total raw score for the HOME is a simple summation of the recoded dichotomous individual item scores and varies by age group, as the number of individual items varies according to the age of the child. The total HOME score as well as the subscores have one imputed decimal place. For example, a score of 30 on the tape is really 3, and so on. In addition, total scores were imputed for children where one or more of the component items had

inadvertently been left unanswered. The imputation procedure essentially assigns an average value for all those items which had been completed to each of the unanswered items. A proration flag variable (C2641.01) specifies the number of items which needed to be imputed; a score of zero on this proration flag variable means that all individual component items were answered.

In addition to the overall HOME score, the Merged Child-Mother File includes two overall subscores as well as a number of component scores for each of the main subscores. The components of the cognitive stimulation and emotional support subscores as well as the other component subscores are specified in Table 16. This table indicates the name and reference number for each of the subscores as well as the component identification for each subscore. A comparison of Table 15 with Table 16 permits identification of the specific questionnaire items included in each of the component scores. Once again, it is emphasized that in order to appropriately extract any of these scores from the Merged Child-Mother File, the user must control for the child's age, as specified by reference (variable) number C163. As there are no appropriate national norms available for the overall HOME score or its components, only non-normalized "raw" scores are provided.

Data Quality and Data Limitations of the HOME-SF.

The overall HOME scale has proven to be a reliable measure. Bradley (1981) reports inter-rater reliabilities from six studies in the high .80s to low .90s. Bradley, Caldwell, and Elardo (1979) found that six month test-retest subscale correlations ranged from .45 to .87. Studying children from six to forty-two months of age, Yeates et al. (1983) found twelve month test-retest reliabilities from .43 to .68, and two-year test-retest reliabilities of .38 to .56. Ramey et al. (1984) reported two-year test-retest reliabilities of .56 and .57. Van Doornick et al. (1981) reported high total score stability ($r = .86$) among siblings tested at least ten months apart.

Prior longitudinal research indicates that the HOME predicts later cognitive, social, and physical development. Yeates et al. (1983) longitudinally compared the predictiveness of the HOME relative to the predictiveness of maternal intelligence for child intellectual development at two, three, and four years of age, finding that maternal intelligence was initially more predictive, but by age four the quality of the home environment was more predictive of cognitive development. The HOME is more predictive of subsequent cognitive development than is concurrently measured cognition (Elardo, Bradley, and Caldwell, 1975). When administered as early as two months of age, the HOME has correlated from .34 to .72 with intelligence tests subsequently administered as late as four-and-a-half years of age, and the HOME at one and two years correlated (.33 to .65) with academic achievement in the first through fourth grades of school (Bee et al., 1982; Bradley and Caldwell, 1976, 1980, 1984; Elardo, Bradley, and Caldwell, 1975; Van Doornick et al., 1981).

Besides these strong predictive correlations with subsequent intellectual development, the HOME has also been proven useful as an early indicator of a variety of developmental risks and delays such as clinical malnutrition, lead burden, failure-to-thrive, socio-cultural retardation, language delay, developmental delay, and poor academic achievement (Elardo and Bradley, 1981). The HOME is moderately related to SES and parental education (r = .2 to .6, Elardo and Bradley, 1981). A meta-analysis of the correlation between SES and intelligence found that measures of the home environment accounted for from four to eleven times as much of the variation in academic achievement and intelligence (median r = .55) as did standard measures of SES. The homes of divorced working mothers provided less cognitive stimulation and emotional support according to the HOME Inventory than did the homes of married (working or nonworking) mothers. Six studies found relationships between temperamentally difficult and unsociable infants, and decreased cognitive stimulation and emotional support available in their homes.

Preliminary evaluation of the HOME-SF at the Center for Human Resource Research provides evidence generally consistent with the notion that the HOME-SF scale appears to be a potentially extremely useful assessment for a variety of social science research. As may be noted in Table 17, the overall HOME-SF shows relatively high reliability, particularly for children age three and over, yielding a Cronbach Alpha coefficient of .7. The internal consistency reliability was found to be alpha = .6 and alpha = .7 for the cognitive stimulation subscale for children three and over and for the emotional support subscale for children age six and over respectively. The overall score and subscores for children under three appear less reliable.

Further enhancing the likely reliability of the HOME-SF is the fact that nearly all mothers completed this assessment for all children. The overall completion rate for this assessment is over 96 percent with little racial/ethnic variability (see Table 18). In addition, the response rate varied little by maternal education or by the maternal age at the birth of the child.

The considerable bivariate cross-sectional linkage between the two primary HOME-SF subscales -- cognitive stimulation and emotional support and the other assessments measured in the 1986 NLSY may be seen in Table 19. For younger children, (those under the age of three) the correlations in this table suggest important linkages between the cognitive stimulation subscale and scores on Motor and Social Development and Body Parts assessments. To a lesser degree, significant correlations may be noted between these two assessments and the HOME emotional support score.

For older children, strong correlations may be noted between both of these HOME subscores and scores on the Peabody Picture Vocabulary Test and, to a lesser degree, with verbal memory scores. Generally, with regard to these assessments, stronger correlations may be noted with the HOME cognition dimension than with the emotional support subscales. While generally still significant, somewhat weaker correlations were found between these HOME scales and the PIAT and Digit Span assessments. Finally, weak linkages were found between the HOME subscales and

the behavior problems index and self perception profile. It is of interest to note, somewhat impressionistically, that linkages between HOME scores and other assessments were generally weaker for the oldest children perhaps reflecting the likelihood that some of the individual HOME items may be less appropriate for the oldest children.

It is also useful to note from the HOME-SF tabular material in Appendix A, Tables A1.1 - A1.20, that children of minority mothers, less educated mothers and children who were born to mothers at youthful ages generally scored substantially lower on the overall HOME-SF as well as on both the cognitive stimulation and emotional support subscales. Reflecting these associations, it is predictable that lower scores for these children on the other assessments may be linked at least in part with their poorer scores on the HOME assessments. This conclusion is based on our knowledge of the generally significant correlations between the HOME subscale scores and other assessments highlighted above.

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Temperament/How My Child Usually Acts

At the time of the 1986 NLSY child survey design, no single instrument seemed adequate to use in measuring child temperament (Hubert, et al., 1982). As a result, a set of Temperament scales was developed based on measures from a variety of sources including Rothbart's Infant Behavior Questionnaire (Rothbart and Derryberry, 1984), Campos and Kagan's compliance scale, and other items selected by Joseph J. Campos. These NLSY scales were translated into Spanish and, where appropriate, administered by bilingual interviewers.

Because the child's temperament is partially a parental perception (Bates, 1980), the behavioral style of children in the NLSY was measured by a set of maternal-report items (for all children younger than seven years) and interviewer ratings (only for children older than seven months). The maternal scale "how my infant usually acts" addresses the activity, predictability, fearfulness, positive affect, and irritability of infants below age one. "How my toddler usually acts" addresses the fearfulness, positive affect, and irritability of one year olds. "How my child usually acts" measures the compliance, inhibition, attachment, and sleep problems of children aged two through six. The interviewer rates the child's shyness when first introduced, shyness at the end of the session, and the child's cooperation, interest and motivation, energy, persistence, and attitude toward and rapport with the interviewer during the assessment.

Temperament is related to the child's impact on family members, and is linked with the development of behavioral problems (Bates, 1980). The Temperament scales selected for this survey include dimensions such as sociability, mood, adaptability, and compliance -- factors which are components of Thomas' easy-difficult temperament construct and which are precursors to personality development and social adjustment (areas measured by the Behavior Problems Index, discussed below), social relations, and performance on tests such as the Motor and Social Development Scale and PPVT-R (e.g., Lamb, 1982).

As with adult personality measures, reviewers of temperament (Bates, 1980; Campos et al., 1983; Hubert et al., 1982) contend that the perceiver plays a significant role, that mild to moderate inter-rater agreement is the rule (median parent-observer correlations of .2 to .4 in infancy increase to .3 to .6 by age two, median between-parent correlations are .4 to .6), that moderate internal consistency (.2 to .8) and retest reliability (to .9) are present and that fair validity coefficients (.3 to .6) are found with a wide variety of criteria. Hubert et al. (1982) state that the most consistent and substantial relationship is found between temperamental difficulty and infant distress/fussiness with people. Published correlates include levels of neurotransmitters associated with stress, spectrographic analysis of cries, respiratory distress and post mature birth syndromes; maternal anxiety, sociability, responsivity, and stress; family moves, employment changes, paternal child care, birth of siblings; sensitivity to change and adversity, social communication, subsequent behavior disorders (i.e., delinquency, emotional disturbance), and cognitive and motor development.

Using the Temperament Scores.

The NLSY Temperament items were administered in three different sections, according to the age of the child. The mother report items in Part A of the Mother Supplement were designed for infants under the age of one, Part B for children age one, and Part C for children between the ages of two and six years. Mothers were asked to rate the usual behavioral tendencies of each child using a 5-point scale. Two interviewer ratings of shyness at the beginning and conclusion of the session were applied to children eight months and older, as were the interviewer evaluations of the child's attitude toward being assessed. While some children younger than eight months received a shyness rating at the start of the assessment, most of these infants were not seen by the interviewer since all other assessments applicable to this age group were based on mothers' reports.

As with the HOME, individual Temperament items and subscale scores are slotted into the same data tape locations, regardless of the age of the child. These items appear in the merged file documentation as reference numbers C2672.01 through C2672.43. Therefore, in order to retrieve a substantively meaningful individual item or subscore, users must control for the age of the child (C163.). Table 20 indicates the linkage between the location of individual Temperament items on the tape and the specific questions in the Mother and Child Supplements on which they are based.

Temperament items in the Mother and Child Supplements were used to construct a total of twelve distinct subscales. Table 21 shows that, while there is considerable comparability across many items, not all dimensions are appropriate for all age groups. Table 22 describes the composition of each of the Temperament subscales for each relevant age group. A comparison of Table 20 with Table 22 permits the user to specify which questionnaire items are included in each subscale. Summary scores simply reflect the sum of the individual items, with some values recoded in reverse where appropriate. Items that were recoded are indicated in Table 22. Since each score typically includes only a limited number of questionnaire items, no proration for missing items was used. Thus, if any item component of a subscale was missing, no score was computed for that dimension of temperament. Since no appropriate national norms are available for this assessment, only raw scores are provided.

In order to fully understand the nature of some of the Temperament subscales, it is important to distinguish between those subscales that are based on mother reports of child tendencies and those that include interviewer ratings of child behavior during the time of assessment. The Sociability subscale and the Difficulty and Friendliness Composites contain interviewer evaluations of the child's attitude toward testing, rapport toward the interviewer and the child's cooperation during assessment. The Inhibition subscale consists of the Interviewer's ratings of the child's shyness both at the beginning and end of the assessment period. The Inhibition subscale is composed of only one item (C2748.) for children zero through seven months. The smaller sample size on this

interviewer rating of shyness reflects the fact that, while mother reports were obtained for these infants, interviewers never actually saw many of the children.

The Difficulty Composite score combines the items in Predictability (reversed), Fearfulness, Positive Affect (reversed) and Irritability for children zero through seven months old. For children eight through eleven months (i.e. the remaining four months of the first year of life), it also includes the Sociability items (reversed). For one year olds Difficulty is a composite of four subscales: Fearfulness, Positive Affect (reversed), Irritability, and Sociability. The Negative Hedonic Tone Composite consists of the items in the Fearfulness, Positive Affect (reversed), and Irritability subscales.

In recent analyses of the 1986 Child Temperament data, Menaghan and Parcel present a more parsimonious set of reliable and valid scales for the three child age groups discussed above (Menaghan and Parcel, 1988). Starting with the six items applicable to children under age one year, they identified two major factors called Active and Predictable. For all children less than two years old, they derived two primary dimensions: one related to the eight items on fearfulness and fussiness, and a second that includes the three affect items related to smiling. The 21 items for children age two through six years yielded three principal factors which they call compliant, shy, and dependent-demanding. This paper is available from the authors.

Data Quality of the Temperament Assessment.

The response rates for each of the Temperament subscales are very high across all age ranges. Appendix Tables A2.1 - A2.36 show that, with few exceptions, the level of valid responses rarely falls below 90 percent, even when sample cases are distributed by race and by age.

Reliability analyses performed by CHRR on the various Temperament subscales reveal that the internal consistency of the subscales is generally moderate to strong. Table 23, which describes the nature of each subscale and the relevant sample of children to which each applies, shows a range of alpha coefficients from a low of .47 for the Irritability subscale for infants to highs of .9 for the Sociability subscales for infants and toddlers. Most of the subscales fall within the moderate to high reliability range of .6 to .8. Table 23 also describes the instances where certain subscales have very limited variability (e.g., Inhibition composed of one item for very young infants) and where composite subscores of the same name may be constructed from slightly different items (e.g., the two versions of the Difficulty Composite for infants).

Some of the lower reliability coefficients in Table 25 may be explained by isolated items or by the failure of certain clusters of items in the composites to correlate with other subscales. For example, a close look at the correlations (not shown in the table) of individual items in the Friendliness Composite score for eight through eleven month old children shows generally negative relationships between interviewer ratings of testing

attitude (C2672.21, C2672.22, C2672.24) and maternal evaluation of irritability (C2672.14 - C2672.17). This discrepancy may reflect the reaction of many children in this age group to the special demands of the testing situation. One particular Irritability item, "child easily startled by a sudden noise" (C2672.14), seems to attenuate the alpha for the Friendliness Composite. This same item also seems to lower the alpha for the Irritability subscale for children under age one. The Affective items for this same age group do not appear to correlate well with the Fearfulness items in the Negative Hedonic Tone Composite, particularly item C2672.07, "infant cries when first sees stranger." Turning to the older children, when item C2762.03, "child protests when asked to go to bed," is removed from the Compliance subscale, the alpha is substantially increased. Perhaps this reluctance to go to bed promptly is a widely observed behavior, independent of other personality dimensions. Three items (C2672.09, C2672.11, and C2762.12) in the Inhibition subscale for children age two and over show a potentially complex interrelationship. It appears that children who tend to fight often show insecurity, intensity of mood, and an unwillingness to share. The current scoring of the Inhibition dimension may mask the interaction of these individual measures, thus attenuating the overall internal consistency of the subscale. The Attachment subscale for this same age group also contains an attenuating item, "child gets worried when mother is upset " (C2672.18). This rating of social perception or identification shows generally low inter-item correlations, particularly with the responsiveness comfort item C2672.13, "trouble soothing or calming child when he/she is upset."

Tables 24 - 27 provide a comprehensive breakdown of the pattern of intersubscale correlations for each of the following age groups: (1) birth through eleven months, (2) eight months through eleven months, (3) twelve months through twenty-three months (one year olds), and (4) twenty-four months through eighty-three months (children age two years through age six years).

Overall, the direction of the correlations present in Table 24 follow a pattern one might expect. Predictability for children under age one shows a positive association with Positive Affect and significant negative correlations with the Irritability dimension and the Difficulty and Negative Hedonic Tone composite scores. The strong positive correlations between the Difficulty composite score and both Irritability and Fearfulness are consistent with the fact that all the items in the two subscales are included in the composite score. Similarly, the strong positive correlations between the Negative Hedonic Tone composite score and the Fearfulness and Irritability subscales reflect the presence of the subscale items in the composite score. Since the Negative Hedonic Tone composite score shares all but three of the Difficulty items, one might expect their inter-correlation to be quite high as seen in the coefficient of .77.

The pattern of the associations among the subscales for eight through eleven month old infants in Table 25 appears to be consistent with the nature of the different subscales. Sociability and Friendliness generally correlate negatively with Inhibition and Positive Affect shows a positive association with Predictability.

Fearfulness and Irritability are positively correlated. The association between Fearfulness and Activity might be attributed to the element of physical reactivity shared by many of their component items.

The intersubscale correlations in Table 26 indicate that for the one year olds assessed, children rated as Inhibited by the interviewer tend to be also rated as less Sociable. As with the younger infants, Fearfulness and Irritability tend to be positively correlated.

The relationship in Table 27 between Inhibition and Sociability appears to be the strongest intersubscale association for the children assessed who were between the ages of two years and six years at the time of assessment. However, users should note that the composition of the Inhibition subscale for these older children differs from that of the younger children. Children who are reported as shy and withdrawn by their mother tend to be rated as less sociable by the interviewer.

Finally, it is useful to note that some components of the Temperament assessment (in particular the Sociability scale which is available for children between the ages of eight months and six years) have high apparent face validity as proxies for the positive or negative nature of the interaction between interviewer and child. Some evidence for this supposition may be found in Table 28 which indicates generally stronger correlations between the Sociability subscale -- which is based on the interviewer's judgement -- and the assessments which were directly administered by the interviewer (e.g. PPVT-R, Verbal Memory). This "halo" effect suggests that children who have good rapport with the interviewer may score somewhat better on assessments or, conversely, that children who perform better on the assessments may be viewed more favorably by their interviewer. Determining the direction of the possible causation is beyond the scope of this discussion. In contrast, correlations between the mother-completed assessments and the sociability scale generally appear somewhat lower, although some exceptions may be noted.

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Motor and Social Development

The Motor and Social Development scale was developed by Dr. Gail Poe of the National Center for Health Statistics. It measures dimensions of the motor, social and cognitive development of young children from birth through three years. The items were derived from standard measures of child development (the Bayley, Gesell, and Denver), which have high reliability and validity. The original test and further analyses by Child Trends of the items' use in a large health survey (of 2,714 children under age four in the 1981 Child Health Supplement to the National Health Interview Survey) provide the age ranges at which each item's developmental milestone is generally reached by U.S. children. Based on the child's age, mothers answer the fifteen most appropriate of the 48 motor and social development items. These items have been used with a full spectrum of minority children with no apparent difficulty. In the 1986 NLSY, a Spanish version of the schedule was provided to mothers whose principal language is Spanish.

Using the Motor and Social Development Assessment.

The NLSY Motor and Social Development assessment has eight components (parts A through H), which a mother completed contingent on the child's age. The assessment is intended for children under four years of age with

Part A appropriate for infants during the first four months of life (i.e. zero through three months) and the most advanced section, Part H, addressed to children between twenty-two and forty-seven months. All of the items are dichotomous (scored either zero or one) and the total raw score for children of a particular age is obtained by a simple summation (with a range of 0 to 15) of the correct responses in the age-appropriate section. Associated with each raw score is an overall percentile and standard score as well as same-gender age appropriate percentile and normed scores. That is, boys were given male national norm scores and girls were given female national norm scores in addition to both genders receiving the combined gender norms. All these normed scores were constructed by the CHRR using data from the nationally representative sample in the 1981 National Health Interview Survey (National Health Interview Survey 1981 Child Health Supplement, DHHS. P.H.S. National Center for Health Statistics, Public Use Data Tape and Documentation (1984)). The total and same gender percentile and standard scores associated with each raw score may be found in Appendix C.

The norms are grouped into fairly narrow age categories reflecting the extreme sensitivity of a child's level of development to his or her age: following a (four month) zero through three month age break, the four through thirty month age range was normed by successive three month age groups with the thirty-one through forty-two month range being normed according to three successive four month categories, followed by one five month (forty-three through forty-seven month) category. No proration was attempted on this assessment since the proportion of missing items is modest and there was some question about the appropriateness of the procedure, given that later items in the assessment tend to be more difficult than earlier items.

As with the HOME assessment, sequentially comparable questionnaire items were slotted into identical tape locations and, thus, assigned identical reference numbers (C2685.01 through C2685.18) for each age group. For example, the first questionnaire item within each age-specified assessment (i.e., Part A through Part H) is assigned reference number C2085.01 and so on. This linkage is specified in Table 29. If one wishes to limit analyses to infants or children within one of the eight age categories, it is necessary to control for the child's age as specified by reference number C163.

Data Quality of the Motor and Social Development Assessment.

Because successive items in this assessment represent increasing levels of difficulty, it was not appropriate to compute a Cronbach's Alpha reliability coefficient for this test. However, a variety of preliminary evaluation activities have been carried out with the MSD scale suggesting that it has a number of properties which make it an assessment that has potentially great analytical value.

First, while the invalid responses on this assessment disproportionately include minority children or children of less educated mothers (see Table 18), the overall non-completion rate is very low -- about 6 percent.

Thus, the potential for biased analyses due to selective non-response is quite small. The intended user should examine the addendum tables which present response patterns and completion rates for this assessment by race/ethnicity and age of child. Appendix Table A3.1, the weighted distribution of the MSD standard scores, shows means and standard deviations by single year of age of child which are consistent with expectations. While the NLSY sample of children obviously does not reflect all U.S. children as represented in the 1981 National Health Interview survey, the youngest children in the NLSY, who have been born to a more representative group of mothers, are somewhat more "typical" of all children. Thus, the fact that the NLSY sample of very young children shows overall means on the MSD approximating 100 offers evidence supportive of satisfactory data quality. An exception to this may be noted for three year olds who have a more constrained distribution of scores. The MSD tends to "top out" for three year olds and does not provide a sensitive ceiling for these older children. Because of this, the overall mean weighted standard score for three year olds is only 96.3. ***For this reason researchers using the assessment should include an age control in any multivariate analyses even when they are using normed scores.***

It is also important to note that social/ethnic differences on this assessment are modest but that the youngest black children score higher than other young children. The MSD Appendix Tables (A3.1 - A3.26) also indicate higher motor and social development scores for female children, consistent with other evidence regarding early gender differences in motor and social development.

Other research underway at the Center for Human Resource Research provides further corroborative evidence regarding these and other findings. Analyses which regress MSD standard scores on a full range of early-in-life explanatory variables suggest that black children at age one score higher than their white counterparts on MSD, but that this advantage apparently vanishes at subsequent ages. Examination of one through three year olds within a multivariate context indicates that girls score substantially (and significantly) higher than boys on this assessment (Mott, 1988). Also, children with health problems early in life score more poorly, as do children with mothers who have less education.

Finally, it may be noted (in Table 30) that a child's MSD score correlates fairly well with a variety of other early-in-life child assessments. The correlations between MSD and other scores generally increase with the child's age, a tendency consistent with the likelihood that test reliability is greater for older children. MSD correlates rather well with HOME-SF cognitive stimulation at all ages, but somewhat less with the HOME-SF emotional support score, suggesting that perhaps the physiological component of the MSD may link more closely with home environment cognitive stimulation than the MSD social component does with the HOME emotional component. Research underway at the CHRR indicates strong independent linkages between these two HOME-SF subscores and MSD for one through three year olds within a multivariate context -- with the cognitive-MSD link being substantially stronger than the emotional-MSD linkage. Both associations remain highly significant even after controlling for a full range of other potentially confounding variables.

Linkages between the MSD score and Memory for Location are more constrained. This will be discussed further below in the Memory for Location section. In contrast, linkages with the Body Parts assessment are reasonably strong, particularly for the two year old children. Finally, correlations between MSD and PPVT-R and verbal memory scores are reasonably high and significant even though the MSD scores for three year olds "top out" prematurely, as noted earlier.

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The Behavior Problems Index

This scale was created by Drs. Nicholas Zill and James Peterson of Child Trends Inc., Washington D.C. to measure the frequency, range and type of childhood behavior problems. Many items were derived from the Achenbach Behavior Problems Checklist (Achenback & Edelbrock, 1981) and other child behavior scales (Graham & Rutter, 1968; Rutter, Tizard, & Whitmore, 1970; Kellam et al, 1975; Peterson & Zill, 1986). Much of the following material describing this assessment was provided by Zill in a Child Trends memorandum dated November 25, 1985.

Parental respondents to the 1981 Child Health Supplement to the National Health Interview Survey were asked an extensive series of structured questions concerning the child's problem behaviors and use of mental health services (NCHS, 1982, pp. 100-102). The specific questions asked varied somewhat depending on the age of the child. The behavior problem items utilized in the NLSY were developed from these items.

The behavior problems summary score is based on responses (from the mothers) to a series of 28 questions dealing with specific problem behaviors that the child may or may not have exhibited in the previous three months. Three response categories ("often true", "sometimes true", and "not true") were used in the questionnaire, but responses to the individual items have been dichotomized and summed to produce an index score for each child. Each item answered "often" or "sometimes true" was given a score of one, and each item answered "not true" was given a score of zero. Two of the items, questions 27 and 28 in the sequence, are appropriate only for children who have ever attended school.

Based on factor analysis, the 28 items can also be used to define six behavioral subscales; antisocial, anxious/depressed, headstrong, hyperactive, immature dependency and peer conflict/social withdrawal. The procedures used to define these subscales are described below. Having been employed in prior national surveys, children from the entire range of social, economic, and ethnic backgrounds may be assessed. A Spanish version of the schedule was used by mothers who preferred using a Mother Supplement translated into Spanish.

Using the Behavior Problems Index.

The Behavior Problems Index assessment was completed by all mothers of children age four years or over on the date the Mother Supplement was administered. There are 28 individual items, of which the final two are completed only for children who are either enrolled in or who have attended school. The 28 items translate into one overall score and six subscores tapping various dimensions of child adjustment. Before scoring, the individual items are recoded such that a value of 3 becomes "0" and code 1 or 2 becomes "1." Thus, higher scores on this index imply a greater level of behavioral problems. There is no proration for missing items, so that if any item response is missing, the overall score and any subscores including that item are coded as invalid skips.

Table 31 specifies which items (denoted by variable reference numbers) are components of each subscore. It may be noted that only the overall raw score and the antisocial subscore utilize items 27 and 28, the items asked only of school children. Thus, for these two subscales, parallel scores are computed for children with school experience and for those who have never attended school. The merged file documentation specifies the link between the reference number and the questionnaire items. The link is straightforward as the reference numbers, which are included on this file as C2725.01 through C2725.28 are in this instance, assigned sequentially from questionnaire item one to questionnaire item 28.

In addition to the overall BPI score and six subscores, normed scores have been constructed based on data from the 1981 National Health Interview Survey. Overall as well as "same-gender" percentile and standard scores (with a national mean of 100 and standard deviation of 15) are available for each child for each score/subscore. These normed scores are based on single year of age data. For children below the age of six, separate norms are computed for children in and out of school. The linkages between the raw scores and the various normed scores may be found in Appendix D. Given the limited number of possible responses for some of the subscores, the user is cautioned that the range of normed outcomes for some of the subscores is quite constrained. As with the other Mother Supplement assessments, if a user wishes to select a sample of children of a particular age, the Mother Supplement child age variable (C163.) should be utilized.

Data Quality of the Behavior Problems Index.

Zill and his associates at Child Trends performed comprehensive factor analysis procedures on the 1981 NCHS data in defining the most appropriate items for inclusion in the overall scale and the various subscales (Zill, 1985). Principal components analyses were used by Child Trends to verify that the items in the scale could be considered to be tapping common underlying dimensions. Using the binary scoring of items described above, major first factors were found for both children aged four though eleven and adolescents aged twelve through seventeen. As anticipated, however, several secondary factors with eigenvalues greater than one were also obtained. For the children aged four through eleven, the first factor accounted for 25 percent of the total variance and 57 percent of the common variance. All but one of the scale items loaded on the first factor at a level of .38 or more. For the adolescents, the first factor accounted for 29 percent of the total variance and 60 percent of the common variance. All scale items loaded on the first factor at a level of .41 or higher. The internal consistency reliability of the index scores was found to be alpha of .89 for the children and alpha of .91 for the adolescents.

Although the behavior problems items in the Child Health Supplement questionnaire are used to derive a single summary score, the scale was also designed to contain several distinct clusters of items, representing some of the more common syndromes of problem behavior found in children and adolescents. The syndromes have already been listed above and component items are specified in Table 31. Subscale scores were produced by dichotomizing responses to individual behavior items as above and summing across subsets of between three and six items. Principal components analysis with varimax rotation was used to verify, first, that the overall behavior scale did contain several separable dimensions similar to those that were hypothesized to occur; and, second, that the groups of items used to compute subscale scores did hang together as anticipated.

It should be noted that a reinterview study of certain Child Health Supplement items was conducted and analyzed by the Bureau of the Census (Schreiner, 1983). Six of the behavior problems items were included in the reinterview questionnaire. The study found that parental reporting of individual items of problem behavior was unstable over a two-week period. (e.g., of those parents who reported on either the original interview or the reinterview that their child had difficulty concentrating, only 46 percent reported such difficulty on *both* interviews.) However, Zill found that when the individual items were combined into a scale, the test-retest reliabilities obtained were quite comparable to the internal consistency reliabilities calculated from the Child Health Supplement public use file. Specifically: four items from the hyperactive subscale were included in the reinterview study. When a scale is formed by combining responses to these items by the binary scoring method described above, the test-retest reliability of the resulting scale score is equal to .63. Using the Spearman-Brown formula to estimate the reliability of a longer scale containing the same type of items, Zill obtained an r

of .68 for a hyperactive subscale containing five items, and r of .92 for a behavior problems index containing 28 items.

Table 32 includes the scale and subscale reliability coefficients calculated by Zill from the 1981 NCHS data and by CHRR from the 1986 NLSY data. The coefficients from these two analyses are generally quite similar. Thus, even though these two surveys were carried out on substantially disparate samples with different interviewing procedures and environments, the close comparability in the coefficients lend support to the notion that the BPI assessment can probably be used with some confidence.

As with the other assessments administered to the mothers of the children, the Behavior Problems response rate is very high. About 95 percent of all available and eligible children have a valid BPI score with little variation between black, white and Hispanic children. In addition, even the limited number of invalid cases show an ethnic distribution similar to that for children with valid responses (see Table 18). Given that the maternal age at the birth of the child was quite young for the mothers of most of these children, and their educational attainment correspondingly lower, *it is not surprising that a disproportionate number of the children evidence behavioral problems.* Whereas a representative national sample of children should have an overall mean standard score of about 100, the NLSY sample has a weighted mean of about 109. (the reader may recall that higher scores on the various BPI scales and subscales represent a greater level of child behavioral problems). Correspondingly, over 20 percent of the NLSY children are in the top (national) 10 percent -- but only 6 percent in the bottom 10 percent (see Appendix Tables A4.1 - A4.12). The interested user may also note from examining the percentile and standard frequencies for the various subscores not included in this document that the NLSY children tend to score high on all of the subtests.

It is useful to emphasize once again that one important reason that the scores for the NLSY children do not correspond closely with a "representative" national sample of children is that they, for the most part, were born when their mothers were relatively young. This is a phenomenon that will be prevalent for all the assessments given to older NLSY children *and needs to be carefully considered when using this data set for research purposes.* In addition, the older the subset of NLSY children one examines, the more pronounced this factor becomes.

Finally, it is useful to note (in Table 33) the generally low correlations between overall BPI score and scores on the various other aptitude/achievement assessments given to children who were age four and over. In addition, there is no systematic pattern to the correlations; children's age shows no apparent linkage with the associations nor do any of the particular assessments measured in the NLSY show stronger associations than others. Thus, while having an above average behavior problem score is generally associated with poorer scores on the aptitude/achievement tests, the correlations are generally very modest. This surprisingly weak association suggests that the behavior problems measured by this scale seem to have only limited relationship with the verbal and mathematical achievements of these elementary school age children.

Parcel and Menaghan recently examined the measurement properties of the 1986 NLSY Child Behavior Problems data (Parcel and Menaghan, 1988). They conducted factor analyses that yielded three sets of reliable subscales, for which they present evidence suggesting their validity. The first group of subscales, for users interested in discriminating behavior in some detail, includes the following: Peer Problems, Aggressive, Hyperactive, Depressed, and Whine. Investigators preferring a single discrimination between undercontrolled and overcontrolled behaviors might consider their Externalizing (Aggressive, Peer Problems, Hyperactive) and Internalizing (Depressed, Whine) factor based scales. Finally, they offer a general measure of behavior problems based on summing the Z score for each of the 28 items. This paper is available from the authors.

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Body Parts Recognition

The Body Parts assessment, developed by Dr. Jerome Kagan of Harvard University, measures infant and toddler (one through three year old) receptive vocabulary knowledge of orally presented words as a means of estimating

verbal intellectual development. The interviewer names each of ten body parts and asks the child to point to that part of his or her body. The overall score attained by the child is a simple summation (from zero to ten) of the number of correct responses. A Spanish version of this assessment was available for use with young Hispanic children.

Using the Body Parts Assessment.

As noted above, the child's body parts score is the sum of the number of items in that section which a child was able to correctly identify (C2761.). Thus, a minimum score is 0 and a maximum score is 10. No proration for missing items was attempted since the later items are generally more difficult than the earlier items in the sequences although the association between item difficulty and item number is not linear. For example, the proportion correctly answering items 7 (finger) and 8 (toe) are substantially greater than the proportion correctly answering item 6 (chin).

Because there may have been some ambiguity in the interviewer instructions, this assessment was scored using two alternate criteria. According to the first criteria, a child had to answer *each* of the ten items either correct (a code of "1") or wrong (a code of "2") on at least one of the three attempts (see page CS-14 in the Child Supplement). If the scoring was completed according to this criterion, then a case was coded a "1" on the body parts scoring criteria flag (C2762.). A second, less restrictive criterion also was considered for some of the children, where some of the individual items were not coded "1" or "2" but were only coded "3" (no answer) on all of the attempts. For this subset of children, a code of "3" was treated as an incorrect response and the overall assessment scored accordingly. These cases can be identified by a value of "2" on the body parts criteria flag. Thus, users may restrict analyses to the more constrained sample or opt to include the children who were scored according to the less conservative definition. As with all the assessments in the Child Supplement, users who plan to extensively evaluate or analyze the results of a particular assessment are strongly urged to acquire the Child Assessment Raw Item file and evaluate the scoring schema and data quality according to their own criteria. While we have made every effort to create scores that are faithful to the intentions of the assessment developers, there are instances where researchers could reasonably disagree about what precise scoring procedures should be utilized.

As no appropriate national norms are available for this assessment, only the total non-normed raw score is included. Since the raw score on this assessment is extremely sensitive to the age of the child, users are encouraged to utilize appropriate techniques which would permit one to analytically compare children of different ages. When controlling for age, researchers should use the Child Supplement child age variable (C162.) which specifies the child's age (in months) as of the Child Supplement assessment date.

Data Quality of the Body Parts Assessment.

The overall reliability and validity of knowing the names of various parts of the body is reported by Kagan to be good. He reports that preschoolers' knowledge of body parts' vocabulary concurrently correlates (r = .80) with other vocabulary measures and estimates the lower bound of Body Parts' parallel form reliability (personal communication, August 22, 1986). The Body Parts assessment parallels other standard tests of early childhood development (the Bayley, Gesell, Vineland, and Denver) in which the examiner asks the child to point to various parts of his or her body.

Notwithstanding the availability of a Spanish version of this assessment in the NLSY, the user should proceed very cautiously when interpreting its reliability and validity, particularly with regard to minority and relatively more disadvantaged children. *It appears that a child's score may be quite sensitive to the child's English language capabilities as well as rapport with the interviewer.*

It is important to emphasize that the non-completion rate on this assessment is about 17 percent, higher than for most of the assessments -- although, somewhat surprisingly, the racial-ethnic variation is moderate (see Table 18). For about half of the completed assessments, a child is reported to not have responded on at least one question, requiring the assumption to be made that a non-response was indeed an incorrect answer (see discussion above on Using the Body Parts Assessment as well as Appendix Tables A5.1 - A5.7). Most importantly, a very large proportion of Hispanic (and to a lesser extent, black) children scored poorly on this assessment. This may reflect English language difficulty as well as perhaps poorer interviewer rapport. With regard to this last point, it is useful to note that there is a relatively high correlation (about .4) between children's Body Parts scores and their score on the Temperament "sociability" subscale (see Table 28). This three-item scale essentially measures the interviewer's subjective evaluation of the child's attitude toward being tested, rapport with interviewer and cooperation. Thus, to some extent, poor scores on the Body Parts assessment may reflect a less than optimal interviewing environment.

The older Hispanic children given this assessment, particularly the two year olds, scored particularly poorly on this assessment, with about 40 percent scoring at least one standard deviation below the mean for all two year olds in the sample (based on internal norms, as no external national norms are available). Aside from this extreme ethnic variation, the distribution of scores appears reasonable; children whose parents have more education or who were born to older mothers score substantially higher on this assessment. Research currently underway at CHRR also indicates that for all one and two year olds, being black or Hispanic or having a mother with limited education is linked with a poorer score on Body Parts even after controlling for a full range of other early-in-life personal and family related explanatory variables. This same multivariate analysis also indicates that, everything else being equal, boys score significantly lower than girls on this assessment.

Correlations between children's Body Parts score and scores on other assessments given to one and two year olds may be found in Table 34. Moderately high zero order correlations may be noted in some instances, in the .25 - .3 range, with the HOME cognitive stimulation score and over .3 for two year olds with the Motor and Social Development score. It is interesting to note that correlations between Body Parts and the HOME emotional support and the Memory for Location scores are greater for one year olds. This suggests that there are meaningful linkages between a child's early verbal development and other components of intellectual, social and physiological development, dimensions presumably measured by these other assessments. It would appear that the linkages with social behavior, alluded to in the above discussion of linkages with the temperament sociability subscale, may be somewhat more critical for the younger children who were given this assessment. The fact that most of the correlations are relatively modest may reflect partly the young age of the sample, as it is generally acknowledged that high levels of reliability and validity are less easily attained when assessing younger children. Additional psychometric (validity) information on Body Parts will be available following the 1988 NLSY survey round, when correlations can be made between 1986 Body Parts scores and scores on other generally more reliable and valid 1988 assessments such as the PPVT-R.

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The Memory for Location Assessment

This assessment was developed and has been used extensively by Dr. Jerome Kagan of Harvard University. It measures a child's short-term memory. The child, aged eight months through three years, watches as a figure is placed under one of two to six cups. The cups are screened from the child's view for one to fifteen seconds; the child is then asked to find the location of the figure. Items increase in difficulty as the number of cups and/or the length of time during which the cups are hidden from view increases. A child's score is based on his or her ability to select the cup hiding the figure.

The number of cognition measures available for use with young children in a large-scale survey such as the NLSY is quite limited. This is one of a relatively small number of reasonably well validated tests available for measuring short-term visual recall memory for preschool (below the age of four) children. Memory is an important component of cognition. Later school learning is closely tied in, indeed, to a considerable degree, is dependent on this ability.

Using the Memory for Location Assessment.

This assessment may be found on pages CS-17 through CS-22 in the 1986 Child Supplement. The number of individual items administered to the child is contingent on the age of the child. Children between the ages of eight and twenty-three months start with item 1, the easiest item; children two years of age begin with item 4, and children three years of age start at item 7. A child's score (C2763.) is based on the highest (most difficult) question answered. A child who cannot answer the entry item receives a raw score of zero *regardless of the point of entry.* Otherwise, if Q.1 is the highest item answered correctly, the child receives a score of 1, all the way up to a score of 10, if the 10th or final item is answered correctly. A child under two years of age can potentially receive a score between zero and 10; a child age two can receive either a score of zero or a raw score between 4 and 10; and a child age three, by virtue of entry at item seven, can only receive a raw score of 0, 7, 8, 9, or 10. Thus, *without developing norms* based on either internal or external criteria, *the user is cautioned against using this outcome for more than very narrow outcome ages.* In addition, the distribution of the outcome variable also suggests that the user should proceed very cautiously before using the raw scores in any manner. Kagan recommends that users develop norms based on grouped data for four month age intervals (e.g., 8-11 months, 12-15 months, and so on). The Child Supplement age variable (C162.) should be used for this purpose.

Because of the relative complexity of administering this assessment, a number of responses were not coded precisely according to the theoretical decision rules. On the advice of the assessment developer, if a particular child followed a sequence which might have led to "extra learning" as part of the assessment process, he or she was still scored. For example, if a child was asked Q.1A after having correctly answered Q.1, the child was scored and not given an "invalid skip" code, even though, theoretically, the child was supposed to proceed directly from Q.1 to Q.2. In addition, a careful examination of the individual responses suggests that a number of children who began the assessment at an improper entry point ended up at a level where they would, in all likelihood, have wound up anyway. These cases were given a valid score and also "flagged" with a code of "2" on the Memory for Location flag variable (C2764.) to indicate a less conservative scoring procedure. A code of "1" on this flag includes all scored cases *except* those defined as 2's. Researchers who plan to use this assessment extensively should carefully examine the actual response patterns for this assessment which may be found in the Child Assessment Raw Item file. Individual researchers may choose to use more or less stringent scoring criteria than those used in developing the score provided in C2763.

It is important to note that *this assessment displays a clear tendency to "top out" for the oldest children* in the age appropriate sample. That is, a very large proportion (63 percent) of all three year olds and 32 percent of two year olds received the maximum raw score of 10 on the assessment (see Appendix Table A6.3). A relatively "normal" distribution may be in evidence only for children below the age of two. This issue needs to

be carefully considered by anyone using this assessment, particularly if one through three year olds are combined in one analysis.

Data Quality of Memory for Location.

The test was prepared and has been extensively used (for example, in the National Collaborative Project) by Jerome Kagan of Harvard University. It has a four month test-retest reliability of .6. It has been shown to correlate reasonably well with a variety of achievement-oriented tests given to small children. Specifically, it correlated rather highly with language comprehension (.45-.60) and drawing ability (r = .63). It has also been used in other cultures.

Our preliminary evaluation of this assessment suggests that Memory for Location scores from the 1986 NLSY should be used cautiously. Until demonstrated otherwise, it is perhaps best to assume that the assessment only measures what it directly purports to measure -- short term memory.

As with the Body Parts assessment, Memory for Location has a relatively high non-completion rate. As may be noted in Table 18, about 20 percent of the eligible children do not have a score and higher non-completion rates may be noted for minority, particularly Hispanic, children. Hispanic children and children of less educated mothers contribute a disproportionate share of the non-completers. In addition, black children have a much higher likelihood of receiving a score of zero on this assessment. Some of the significant racial discrepancy in this regard may well reflect racial differences in receptivity or willingness of very small children to be tested. Perhaps related to this is the relatively high (.32) zero order correlation between the Memory for Location score and the Temperament sociability score (see discussion in Temperament section). As with the Body Parts assessment, it may well be that the Memory for Location assessment may be quite sensitive to the interviewer-child interaction process.

Analyses currently underway at CHRR indicate that one through three-year-old black children and children of less educated mothers score lower on the Memory for Location assessment than do other children (Mott, 1988, cited in MSD section). Aside from these two factors, the only other (of a long list of) explanatory variable linked with Memory for Location was the child's gender; boys perform more poorly on this assessment than do girls.

As mentioned above, the researcher is cautioned against using Memory for Location results to generalize beyond its measurement of short-term memory retention. As may be noted in Table 35, the zero order correlations between Memory for Location scores and HOME scores, Motor and Social Development scores, Body Parts scores and PPVT-R or Verbal Memory scores (for three year olds) are generally low although statistically significant. While the signs are generally in the expected direction, the strength of the associations are modest.

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The McCarthy Scale of Children's Abilities; Verbal Memory Subscale

The Verbal Memory subscale of the McCarthy Scale of Children's Abilities assesses a child's *short-term* memory in response to auditory stimuli. The Verbal Memory subtest selected for use in the NLSY is only one of six scales which form the complete McCarthy assessment battery. First, the child aged from three years through six years repeats words or sentences said by the interviewer. Second, the child listens to and then retells the essential aspects of a short story.

In the first half of the word-sentence component of the assessment (Part A), the score which the child receives is contingent on the child repeating a series of words, ideally in the same sequence as they were uttered by the interviewer (see pages CS-25 to CS-26 in the 1986 Child Supplement). In Part B of this first section the child is scored according to the number of key words which he or she repeats from a sentence read by the interviewer. The combined total score for Parts A and B determines whether the story (Part C) is administered. In Part C, the child is read a story paragraph and then scored on the basis of his or her ability to recall key ideas from that story (see pages CS-27 and CS-28 in the 1986 Child Supplement). National norms are available for this assessment so a child is assigned normed scores based on his or her performance in comparison with a nationally representative sample.

Using the Verbal Memory Subscale.

As noted above, Verbal Memory is essentially a two part assessment given to children between the ages of three and six. The first part (Parts A plus Part B) generates one total score which reflects the number of correct word responses to the words and sentences on page CS-26 in the Child Supplement. One total "raw" score (C2772.) is generated for this section. Appropriate national norms are available for this assessment from the McCarthy Manual (McCarthy, D., 1972, page 205). Thus, percentile (C2773.) and standard (C2774.) scores are available for linking with the raw score.

Entry into the Story section of this assessment (Part C) is contingent on receiving a combined raw score of at least 8 on Parts A and B. The researcher may note that there are a few instances of children with invalid skips on Part A and Part B who received a score on Part C. While it may not have been possible to score A and B for various reasons, the available information was sufficient for the scorer to be confident that the combined A and B score was at least 8. Children who receive a valid score of less than 8 on Part A and Part B are automatically assigned a "0" on Part C. *This explains the considerable heaping at the zero outcome for Part C.*

The scoring of the Story in Part C is a simple summation of the number of key words/phrases identified correctly from the paragraph on page CS-27 of the 1986 Child Supplement. No proration was attempted for missing responses. The key story concepts appear on page CS-29 but are not included on the merged Child-Mother file. Users wishing to examine the individual components further will need to access the Child Assessment Raw Item file. A total raw score (C2775.) and two normed scores (C2776. and C2777.) are generated for Part C.

From an analytical perspective, the prospective user should note that the distributions of the percentile and standard scores for Part C are somewhat uneven, reflecting the fact that the Part C outcome allows for only twelve possible responses (0 through 11) with a major heaping as noted, at the zero category. The fact that the percentile/standard scores assigned to the various raw scores vary by the age of the child smooths the normed responses somewhat. However, the user is encouraged to examine the patterning of the normed responses before proceeding with their research. As with all of the assessments in the Child Supplement, C162. should be utilized when stratifying the sample by age of child.

Data Quality of the Verbal Memory Subscale.

This assessment, published by the Psychological Corporation, measures a critical dimension of cognition required for current and later development and school achievement. In a Spanish population, the McCarthy Verbal Memory subscale correlated between .43 and .57 with reading achievement and between .30 and .33 with math achievement. It correlated with the PIAT subscales for reading recognition (r = .59), reading comprehension (r = .39), and mathematics (r = .42).

It is a highly respected and well-establishing test, and has high internal consistency (r = .80) and high validity with the Metropolitan Achievement Test, a widely used academic test. Besides correlating with academic achievement measures, Verbal Memory also correlates (r = .42) with vocabulary knowledge (PPVT-R), an indicator of verbal intelligence. This test has been normed on populations which include minority groups.

While this subscale has a high face validity regarding what it purports to measure, the user should be sensitive to the fact that the scoring of Part C, the story section, undoubtedly includes an element of subjectivity. Interviewers can, in some instances, disagree regarding whether or not a child's specific response was indeed a "correct" or "incorrect" interpretation of an aspect of the story. Also, to some extent, the verbatim verbal responses recorded by the interviewer could in some instances be coded in different manners by different interviewers. In order to test this latter premise, NORC had the verbatim responses for about 400 children coded independently by two coders. There was complete agreement between coders for 92 percent of the respondents.

At a different level, there is also some possibility that the Part A response patterns reflect a lack of precision in the instructions -- an ambiguity that also exists in the McCarthy manual. The instructions (for Part A) only ask the child to repeat the words which the interviewer reads to him or her but does not specify that the words should be repeated in the same sequence. However, in the scoring, the respondent loses a point if the words are repeated out of sequence. Thus, the extent to which the words were repeated in or out of sequence may have been a function of how the instructions were understood, an artifact that could attenuate the reliability of the Part A score.

The overall completion rate for the Verbal Memory subscale is quite a bit higher than for most of the other NLSY assessments which were given to the youngest children. There are, however, clear differences in response rates between Hispanic and other children. While completion rates on both the word and story components approximate 95 percent for white and black children, they are below 90 percent for Hispanic youth (see Table 18). Thus, once again, there is surface evidence that language constraints come into play when evaluating the reliability and potential validity of this assessment. With regard to this assessment, it is important to note that a Spanish translation was *not* utilized. This test was one of English language verbal retention. Thus, a language bias is clearly possible and implied for a least some children. For both the word and story components of the assessment, Hispanic children and children of less educated mothers are heavily over-represented among those who could not be scored -- the "invalid response" subset. However, given that the overall non-completion rate is relatively modest, it is not likely that differential response patterns (by race/ethnicity or other characteristics) should bias analyses in a major way.

Because the Verbal Memory raw scores were normed against a nationally representative population, it is instructive to examine the weighted standard score distributions for both the Part A plus B and Part C responses. Given that the NLSY sample of children over-represents those born to youthful mothers, one might anticipate that our sample should score below average compared with a full national cross-section of children. This, indeed, is the pattern which may be found in the distributions in Appendix Tables A7.1 - A7.20. In comparison with national means of 100, our sample has a mean score of 95.2 on Parts A and B and 94.9 on Part C. It is also of some importance to note that the younger children score closer to the national mean, reflecting the fact that they were born, on average, to older mothers, who had racial/ethnic and socioeconomic characteristics more similar to a full national cross-section of mothers. Also, scores for blacks and whites on part A plus B are quite similar to each other, but distinctly different from the Hispanic distribution, undoubtedly related to the fact that this was an English language assessment. In contrast, the racial/ethnic variations in the Part C scores are very modest, perhaps reflecting to some extent a language "selecting out" process; in order to be eligible for Part C, a child had to have attained at least a score of 8 on Part A plus B.

From Table 36, one may note that the children's scores on the Verbal Memory assessments correlate to varying degrees with the other assessments completed by children in the three through six age range. Verbal Memory (A plus B) correlates in the .3 - .4 range with the children's PPVT scores -- not substantially different from the .42 correlation evidenced between the same assessments for a national population of children. For five and six year olds, the correlation between Parts A plus B and PIAT-math is in the .3 - .4 range and about .3 with PIAT-reading recognition, the basic reading achievement component in the PIAT series.

The linkages between the Verbal Memory Part C (story) scores and the other assessments are generally similar, but more constrained. The correlations with PPVT are generally in the .25 - .35 range but are generally modest with the PIAT series. Somewhat surprisingly, the Part C correlations with PIAT-reading comprehension are very small, not attaining statistical significance.

Linkages between Verbal Memory and the various non-achievement (mother completed) assessments are also generally significant with the associations in the direction anticipated. The correlations between Verbal Memory (all parts) and Motor and Social Development for three year olds are around .25; the correlations with Behavior Problems for the older children are inverse but generally weak. Finally, moderate positive associations may be noted between both parts of Verbal Memory and the HOME cognitive stimulation and emotional support subscales. These linkages appear weakest for the six year olds, perhaps reflecting a likelihood that school and other influences outside the home may be assuming more dominant roles. Finally, it may be noted from Table 28, that for children of preschool age (three and four year olds) there are rather substantial zero order correlations -- in the .35 to .47 range -- between the Verbal Memory scores and the Temperament sociability subscale. The causal implications of this linkage are undoubtedly complex as a positive rapport between interviewer and child could possibly positively affect a child's responses on this assessment and conversely, a child who performs well may be more likely to be rated highly by an interviewer. It is also worth noting that the linkages between these same assessments are weaker for five and six year olds, consistent with the notion that older children might be less affected by superficial contacts with "new and strange" individuals -- since they frequently are placed in such situations in their preschool or elementary school environment.

Finally, as a more general point, it is useful to reiterate that in general, the correlations between interviewer administered assessments (and to a lesser degree between mother administered assessments) tend to be larger than correlations between interviewer and maternal administered assessments. While the relatively large correlations between Verbal Memory and the various achievement batteries are not surprising, it may well be that such connections may reflect a "halo effect" of sorts as children respond -- either positively or negatively -- to a particular interviewing environment or situation.

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Self Perception Profile for Children (SPPC); "What I am Like"

This self-report magnitude estimation scale measures a child's sense of general self-worth and self competence in the domain of academic skills (Harter, Susan. "The Perceived Competence Scale for Children." *Child Development* 53 (1984: 87-97). The twelve items in this assessment translate into two subscores, a global self-worth score and a scholastic competence score. These two scales represent two of seven subscales developed by Susan Harter. A full description of all of the subscales may be found in Harter (1985).

The assessment is completed by children age eight and over. Each of the two subscales include six items which are scored between one and four, with higher scores representing greater scholastic competence or greater global self-worth. Only raw scores, which are a simple summation of the six individual items in each scale, are included in the NLSY merged child-mother file, as no national norms are available.

The assessment is administered as follows (citing from the manual): "The child is first asked to decide which kind of kid is most like him or her, and then asked whether this is only sort of true or really true for him or her. The effectiveness of this question format lies in the implication that half of the kids in the world (or in one's reference group) view themselves in one way, whereas the other half view themselves in the opposite manner. That is, this type of question legitimizes either choice. Our confidence in this format is bolstered by the fact that children's verbal elaborations on the reasons for their choice indicate that they are giving accurate self-perceptions rather than socially desirable responses. The statistical data provide additional evidence with regard to the effectiveness of this type of question."

In the NLSY, this instrument was directly administered by the interviewer to the children. The interviewer read each statement to the children, then asked "which kind of kid" they were more like, and followed up by asking whether or not the particular response was "really true for you" or "only sort of true for you." Only the individual responses were coded by the interviewer; the scoring was done at the Center for Human Resource Research.

Using the Self Perception Profile for Children.

This assessment is completed by children age eight years and over. Each of the two scores is a simple summation of six items. The global self-worth score is a summation of the six "even numbered" items, beginning with the second item (see pages CS-34 and CS-35 in the 1986 Child Supplement). The scholastic competence score is a summation of the odd numbered items, beginning with item one. There are no appropriate national norms available for this assessment so only the raw scores are available. For a small number of cases, there are some missing items. In these instances, a proration was attempted, assigning average values for the items in the particular score which were completed to the missing items. Two proration flag variables (C2790.01 and 2791.01) are included which permit the user to identify those cases which were prorated. A zero on these flags indicates that all items were completed, a "1" indicates that one item was missing, and so on. Only a very small number of cases required proration. Because the individual items may have intrinsic value, the twelve individual items (C2792.01 - C2792.12) are included on the merged child-mother file.

Data Quality of the Self Perception Profile for Children.

There are many studies which have documented the importance of the Self Perception Profile scale as a predictor of important child outcomes and behaviors. For example, it has been shown to correlate highly with teacher ratings of children and with a child's achievement motivation. It has high internal reliability ($r = .73$ to $r = .86$) and high (nine month) test-retest reliability ($r = .8$). The schedule translated into Spanish with no difficulty and prior uses of the schedule suggest no apparent cultural bias.

Research by Harter on an earlier version of this assessment indicated that the individual items follow reasonably normal distribution patterns, with means falling slightly above the 2.5 midpoint and standard deviations fluctuating around the value of 1, revealing adequate item variability (Harter, 1982). An examination of the twelve individual responses, as reported on in the NLSY, similarly suggests a reasonable item distribution and variation. The individual item frequencies may be found in the 1986 Merged Child-Mother file codebook. The overall weighted average mean score for the NLSY sample was 2.81 for the scholastic subscale and 3.24 for the global subscale. An examination of Table 3 in Harter (1985) reveals comparable means for her samples.

Overall, the NLSY administration of the SPPC posed few difficulties in the field. Completion for the whole sample exceeded 95 percent so even the fact that the non-completers tend to be children of less educated mothers is not likely to introduce any significant bias (see Table 18).

In general, the reported reliabilities for the NLSY administration of these two subscales were somewhat lower than those reported in Harter (1985). She reports internal consistency reliabilities for the two subscales on various samples at around .8 whereas the NLSY data yielded alphas of .66 for the global self-worth subscale and .64 for the scholastic competence subscale (Table 17). How much these differences reflect significant differences between samples (e.g. the NLSY sample includes a heavy over-representation of disadvantaged youth) cannot be assessed at this time.

For the interested data user, Table 37 reports the inter-item NLSY correlations for the two sub-scales. In general, the individual items correlate in the .6 range with their respective sub-scale total scores, and in the .2 - .3 range with each other. No comparable data are available which would permit us to compare these inter-item correlations with other studies. As may be noted in Table 37, the overall correlation between these self-worth and scholastic subscales is .29 for 8 year olds and .36 for children age 9 and over. This is substantially lower than the comparable correlations reported by Harter for her various subsamples -- which ranged between .46 and .64 (see Table 7 in Harter, 1985).

More generally, the global self-worth subscale shows little correlation with the various other child assessments in the NLSY. Indeed, as may be noted in Table 38, the correlations between global self-worth and the PIAT, PPVT and Digit Span assessments do not attain significance for children at any age. (In this regard, it is worth noting that the SPPC profile was completed by the children prior to their completion of these other assessments. Thus, SPPC scores were not contaminated by prior success or failure on any of the aptitude or achievement assessments.) The scholastic subscale does correlate in the .20 - .27 range with these various assessments for children age nine and over. In this regard, the lack of correlation for eight year olds may perhaps reflect a lesser ability by eight year olds to understand the individual Harter items.

Finally, neither the scholastic nor global self perception scales show any major variability in response patterns according to various demographic characteristics as reported in Appendix Tables A8.1 - A8.10. Race/ethnicity, maternal education and maternal age at birth of the child do not appear to be closely linked with a child's score on this assessment.

References.

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Harter, Susan and J.P. Connell. 1984. "A Model of Children's Achievement and Related Self-Perceptions of Competence." In J. Nicholls (ed.), Advances in Motivation and Achievement, Vol. 3. Greenwich, Connecticut: JAI Press.

Memory for Digit Span (Wechsler Scale)

The Memory for Digit Span assessment, a component of the Wechsler Intelligence Scale for Children (Wechsler, 1974), is a measure of short term memory for children aged seven and over. There are two parts to this measure. First, the child listens to and repeats a sequence of numbers said by the interviewer. In the second part, the child listens to a sequence of numbers and repeats them in reverse order. In both parts, the length of the sequence of numbers increases as the child responds correctly.

This subscale is from the revised Wechsler intelligence scale for children (WISC-R) published by the Psychological Corporation. The WISC-R is one of the best normed and most highly respected measures of child intelligence (although it should be noted that the Wechsler digit span component is one of the two parts of the Wechsler scale which was not used in establishing I.Q. tables). The precise instructions and items used in this assessment may be found on pages CS-37 through CS-39 of the 1986 Child Supplement.

Using the Memory for Digit Span Assessment.

The Memory for Digit Span assessment was completed by children aged seven years and older. This assessment generates three non-normed "raw" scores (C2802. through 2804.) and one overall age-appropriate normed standard score (C2805.). Whereas the normed scores for the other assessments in this instrument are based on a mean of 100 and a standard deviation of 15, the Digit Span assessment is normed against a distribution which has a mean of ten and a standard deviation of three. The child is instructed to repeat a series of fourteen number sequences (at increasing levels of difficulty) forward and a different series of numbers backwards. Each correct response is worth one point; the theoretical maximum on each of the subscores is, thus, 14 and for the total score 28. The forward digit sequence is completed prior to the backward digit sequence. However, entry into the reverse sequence is not contingent on successful entry or completion of the forward sequence. Where appropriate, a Spanish version of this assessment was utilized. The norms may be found in Wechsler (1974, pp. 118-150).

Data Quality of the Memory for Digit Span Assessment.

The Digit Span score is considered a good measure of short-term memory and attentiveness for children seven and older. Its parallel form reliability is about .53. Its average reliability (across the 6.5 to 15.5 age span) is reported as .78 (Chapter 4 in Wechsler, 1974). It correlates (r = .45) with PIAT Reading Recognition. Its correlation with the Stanford Binet IQ (Form L-M) is reported as .11 at age six, .44 at age nine and one-half and .30 at age twelve and one-half (Table 18 in Wechsler, 1974). When administered at age sixteen, it correlates .68 with the full WAIS IQ score. Thus, in addition to being reliable, it appears to correlate at moderate levels with various intelligence measures.

Shifting to an internal evaluation of the NLSY Digit Span scale, it may be noted in Table 18 that the overall completion rate for the total score is around 90 percent, with slightly higher (92-93 percent) completion rates for the forward and backwards subscales. In addition, there are no substantial differences in completion rates by race/ethnicity or social class.

An examination of the Digit Span scoring pattern according to various demographic characteristics (in Appendix Tables A9.1 through A9.16) suggests some interesting variations; generally, standardized scores decline with increasing age of child, perhaps reflecting the fact that the older children, by virtue of having been born to more youthful mothers, may be more disadvantaged. Also, the overall standard scores for white children are higher than those for black or Hispanic children. Finally, a child's score on this assessment is quite sensitive to his or her mother's level of education.

An examination of the "raw" (nonstandardized) forward and backward component scores reveals that, not surprisingly, forward scores for all groups are substantially higher than the backwards scores. It is of some interest to note, however, that the *racial and socioeconomic differentials noted for the overall digit span score reflect primarily differences in the forward component*; differences between groups in the backward score are quite modest, suggesting that the two subscores may at least partially be tapping different dimensions of this particular innate and socially acquired skill.

Finally, correlations between the overall Digit Span score and the various other assessment outcomes given to children age seven and above suggest that there are moderate linkages (see Table 39). The correlations between Digit Span and the PIAT assessments are in the .38 - .44 range with the Digit Span - PPVT linkage being somewhat smaller (.23 - .31). There are no obvious age gradients to the correlations. Substantially more modest linkages are found between Digit Span and the mother administered HOME and Behavior Problems assessments.

References.

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The Peabody Individual Achievement Test (PIAT) Mathematics Assessment

The PIAT is a wide-range measure of academic achievement for children aged five and over which is widely known and used in research. It is among the most widely used brief assessment of academic achievement having demonstrably high test-retest reliability and concurrent validity. The NLSY Child Supplement includes three subtests from the full PIAT battery, the Mathematics, Reading Recognition and Reading Comprehension assessments. The Merged Child-Mother file includes separate raw as well as standardized scores for the Mathematics and Reading assessments. We focus here specifically on the Mathematics assessment, but many of these general comments are equally appropriate for the other PIAT (as well as PPVT) assessments.

The PIAT Mathematics assessment protocol may be found on pages CS-41 through CS-44 of the 1986 Child Supplement. This subscale measures a child's attainment in mathematics as taught in mainstream education. It consists of eighty-four multiple-choice items of increasing difficulty. It begins with such early skills as recognizing numerals and progresses to measuring advanced concepts in geometry and trigonometry. Essentially, the child looks at each problem and then chooses an answer by pointing to or naming one of four options.

The PIAT Mathematics assessment was administered to all children whose "PPVT age" was five years and above. Administration of this assessment is relatively straightforward, and the resulting completion rate quite high. Children enter the assessment at an age-appropriate item (although this was not essential to the scoring) and establish a "basal" by attaining five consecutive correct responses. A "ceiling" is reached when five of seven items are incorrectly answered.

For a precise statement of the norm derivations, the user should consult Dunn, L.M. and Markwardt, F.C., *PIAT Manual*, Circle Pines, Minnesota: American Guidance Service, 1970, (pp 81-91; 95). In interpreting the normed scores, the researcher should note that the *PIAT assessments were normed about 20 years ago.* Thus, social changes affecting the mathematics and reading knowledge of small children in recent years may have altered the mean and dispersion of the reading distributions between 1970 and 1986. This issue will be considered further in the "data quality" section below. Citations relevant to the PIAT's appear at the end of the discussion of the PIAT Reading Comprehension subtest.

Using the PIAT Mathematics Assessment.

As mentioned above, children generally entered the assessment at an age-appropriate item and established a "basal" by attaining five consecutive correct responses and a ceiling by incorrectly answering five of seven

consecutive responses. A child's non-normalized score (C2808.) is equal to the basal score plus the number of correct responses between the basal and ceiling score. Normalized percentile (C2809.) and standard (C2810.) scores were derived, on an age-specific basis, from the child's raw score. The user is reminded that *a child's age determination for this assessment was based on a PPVT age.* The norming procedures were essentially a two step process with the percentile scores being derived from the raw scores and the standard scores from the percentile scores. The national norming sample had a mean of 100 and a standard deviation of 15. The individual item "correct-incorrect" codes may be found in the Child Assessment Raw Item file, which can be separately acquired from the Center for Human Resource Research (see Section 6 for tape information).

The scoring (of this and the other PIAT and PPVT assessments) was relatively straightforward. The major scoring problem reflected the fact that for a modest proportion of the children, individual items (within the presumed valid range of responses) may have been inadvertently skipped. A substantial number of cases originally deemed "unscorable" were retrieved once the actual patterns of response on the various assessments were individually considered. This edit was possible because the interviewer recorded the actual response as well as a score of correct or wrong for each answer. Thus, if the correct-wrong item was inadvertently left blank but the actual response was available, it was frequently possible to make a post hoc determination of "correctness." Depending on the user's research intention, it may be possible to retrieve additional cases if one is willing to sacrifice some precision in the scoring. For example, some additional cases could have been scored if one is willing to accept as adequate a score which would not deviate by more than one or two points from the "true" score. In general, users of the Peabody assessments are encouraged to obtain the Raw Item Child Assessment file in order to carefully examine the individual response patterns as well as the reasons for invalid scores.

Data Quality of the PIAT Math Assessment.

The PIAT Mathematics assessment is widely used and is generally considered to be highly reliable and valid. Of all psychological tests, the PIAT had the forty-second largest number of citations since 1978 in Mitchell's (1983) Tests in Print. The PIAT was standardized on a national sample of 2887 kindergarten through twelfth grade children in the late 1960s. The one month test-retest reliability for the PIAT Mathematics assessment was .74 with lower levels of reliability generally evidenced at the lower grades (Table 9, Dunn and Markwardt, 1970). Depending on grade level, the mathematics scores correlated between .6 (fifth grade) and .72 (first grade) with the overall test score (Table 11, Dunn and Markwardt, 1970). As a measure of concurrent validity, the mathematics score was found to correlate from a high of .73 for fifth graders to a low of .34 for kindergarten children with children's PPVT IQ scores (Table 14, Dunn and Markwardt, 1970).

Shifting to our internal evaluation, it may be noted (in Table 18) that the overall PIAT Math completion rate ranges from close to 94 percent for black and white children to 88.5 percent for Hispanic children. The non-completers were heavily over-represented by Hispanic children and children whose mothers had less than twelve years of school. Essentially, there are two kinds of non-completers. First, there are some children who were inadvertently skipped over even though they were of an appropriate age. Second, there were a number of children who could not be scored because the scoring decision rules were not followed properly so either a basal or ceiling could not be obtained. The first category included a disproportionate number of children with language difficulties. The second category tended to be more randomly distributed - with a relatively large proportion of these incompletions being accounted for by a small number of interviewers who had difficulty with the scoring procedures.

The NLSY PIAT Math scores show systematically stronger correlations with other assessments than any of the other tests given. As may be noted in Table 40, on an age specific basis, PIAT Math correlated at between .47 and .57 with PPVT. For children age 6 and over, its correlations with PIAT Reading Recognition ranged from .52 - .63 and with PIAT Reading Recognition from .43 to .61. Finally, for children age 7 and over, its correlations with the Wechsler Digit Span scores were in the .4 range.

The relationships between the standardized scores and the various demographic characteristics may be noted in Appendix Tables A10.1 and A10.6. Overall, the scores for white children are systematically higher than for the minority scores by several points. Not surprisingly, children of better educated mothers score above average and children born to younger mothers do not score as well.

Perhaps the most important conclusion to be drawn from the PIAT Appendix Tables A10.1 - A10.10 is that the 1986 NLSY sample of children has essentially the same mean PIAT Math score (99.8) as the national sample against which it was normed. This is in spite of the fact that the NLSY sample, as described earlier, does *not* typify a nationally representative sample of American children. While a definitive reason for this anomaly cannot be given at this time, it is hypothesized that this similarity probably reflects the fact that the PIAT norming sample was typical of U.S. children in the late 1960s. It may well be that external influences such as television (e.g. "Sesame Street" programming) may have led to raising of *minimal* mathematics knowledge -- although not necessarily enhancing *advanced* mathematics capabilities. The results in the Appendix tables support this supposition. It may be noted that while the overall percentile mean on PIAT Math for the NLSY sample approximates 50, only about 5 percent of the children fell within the top 10 percent and 14 percent within the top 20 percent -- compared with the late 1960s norming sample. In contrast, the bottom 20 percent also seems somewhat *under*-represented compared with the norming sample. Thus, there is some modest evidence that the NLSY sample is above average (compared with 1960s children) in meeting minimal mathematics standards (e.g. being able to answer the relatively basic elementary mathematics questions) but below average in coping with more complex mathematics concepts and

operations. In summary, all of the above evidence is consistent with the notion that the PIAT Math should be an effective outcome measure for a full range of analytical studies that probe sample variations relating to demographic and socioeconomic factors. However, *it should be used cautiously if one's primary research emphasis is the comparison of these results with other population groups, as the reported normed scores appear to be unrealistically high.*

The Peabody Individual Achievement Test (PIAT) Reading Recognition Assessment

This subscale (one of five in the overall PIAT test) measures word recognition and pronunciation ability -- essential components of reading achievement. Children read a word silently, then say it aloud. PIAT Reading Recognition contains eighty-four items, each with four options, which increase in difficulty from preschool to high school levels. Skills assessed include matching letters, naming names, and reading single words aloud.

To quote directly from the PIAT Manual, the rationale for the reading recognition subtest is as follows: "In a technical sense, after the first 18 readiness-type items, the general objective of the reading recognition subtest is to measure skills in translating sequences of printed alphabetic symbols which form words, into speech sounds that can be understood by others as words. This subtest might also be viewed as an oral reading test. While it is recognized that reading aloud is only one aspect of general reading ability, it is a skill useful throughout life in a wide range of everyday situations in or out of school." (Dunn and Markwardt, 1970, pp. 19-20). The authors also recognize that "performance on the reading recognition subtest becomes increasingly confounded with the acculturation factors as one moves beyond the early grades."

This assessment was administered to children whose PPVT age is five and over. The scoring decisions and procedures are identical to those described for the PIAT Mathematics assessment and a description of the process and recognition words may be found in the 1986 Child Supplement on pages CS-45 through CS-47. The only difference in the implementation procedures between the PIAT Mathematics and PIAT Reading Recognition assessment is that the entry point into the Reading Recognition assessment is based on the child's score in the Mathematics assessment, although entering at the correct point is not essential to the scoring.

As with the PIAT Mathematics assessment, it is important to note that the norming sample was selected and the norming carried out in the late 1960s. This has implications for interpreting the standardized scores of the children in the NLSY sample, as will be noted below.

Using the PIAT Reading Recognition Assessment.

The scoring procedures for the PIAT Reading Recognition assessment are identical to those used for PIAT Mathematics. Three scores are reported: an overall non-normed raw score (C2811.), and two normed scores - a percentile score (C2812.) and a standard score (C2813.). The national norming sample had a mean of 100 and a standard deviation of 15.

As with the Mathematics assessment, children with invalid scores on this assessment either inadvertently never entered the assessment or else were unscorable because of inadvertent skips which precluded obtaining either a basal or ceiling. In some instances, a careful examination of the individual responses (available on the Child Assessment Raw Item file) in conjunction with an examination of the interviewer's actual scoring calculations permitted clarification of and ultimate scoring of additional cases.

It is, however, important to note that whereas the actual answer to each item was coded for the PIAT Mathematics responses, this was not done for the PIAT Reading Recognition items. This is one reason why the overall response rate is slightly lower on the PIAT Reading Recognition assessment: in contrast with the PIAT mathematics assessment, it was not possible to rectify inadvertent skips for some children on the PIAT Reading Recognition assessment where the "correct-non-correct" check item was inadvertently left blank. As with the other assessment, researchers who plan to use the assessment extensively are encouraged to examine the individual response patterns. Where a particular researcher does not require great precision on this particular outcome (e.g. a categorization of scores into a number of discrete categories being sufficient), it may be possible to reduce the non-completion rate. In a number of cases, while an exact score may not be determinate, an approximate score determination (within two or three points, or a score of at least a certain level) may be possible.

Data Quality of the PIAT Reading Recognition Assessment.

A number of the general reliability and validity issues and statistics relating to the PIAT assessment battery have already been mentioned in the PIAT Mathematics data quality section and will not be repeated here.

As noted in the PIAT Manual, Reading Recognition (one month) test-retest reliability ranged between .81 for kindergarten level children to .94 for third graders (an overall median of .89 for all grades through grade twelve). Thus, this particular subscale is apparently highly reliable. As already noted, it correlates moderately well with PIAT Mathematics scores. In addition, as one progresses from kindergarten through grade five, its correlation with PIAT spelling gradually increases from .27 to .72. It correlated between .78 (first grade) and .88 (third grade) with the overall PIAT total test score, and between .42 (fifth grade and kindergarten) and .64 (third grade) with the PPVT IQ score. Thus, its concurrent validity as evidenced by correlations with the PPVT (a median of .55 for grades kindergarten through twelve) is moderately high. Finally,

Hamill and McNutt's (1981) meta-analysis (8239 coefficients from 322 studies) of reading correlates reported a concurrent correlation of .72 between reading recognition and composite reading.

Shifting from these reported external comparisons to internal quality checks, the results of our examination of PIAT Recognition in many ways parallels our earlier discussion of PIAT Mathematics. While slightly lower, the PIAT Reading Recognition completion rate level and pattern of completion parallels what was found with PIAT Mathematics. In addition, the potential for bias is similar as non-completion rates are significantly higher for Hispanic children and children of less educated mothers (see Table 18). This ethnic differential could be anticipated given that this assessment was administered only in English.

An examination of the PIAT Reading Recognition standard score distribution in Appendix Tables A11.1 and A11.6 also show differential patterns similar to what was found for PIAT Mathematics -- although the level of the standardized scores is significantly higher. Scores are highest for white children and for children who have better educated mothers.

It is important to note that the scores on this assessment are much higher than what might have been anticipated given the fact that the sample of children includes a disproportionate number of children born to poor and minority mothers. This phenomenon was already noted for PIAT Mathematics. However, it is much more pronounced for the Reading Recognition scores. It may be recalled that the norming sample, which was drawn in the late 1960s, had a mean standardized score (by definition) of 100. The NLSY sample has an overall mean score of 105 -- ranging from 101 for Hispanic children to 107 for white children. Thus, even though NLSY children are disadvantaged compared with a full cross-section of contemporary American children, they nonetheless score *above* average compared to what one might anticipate for a full American cross-section of children! It is likely that this pattern at least partly reflects societal changes which have occurred in American society during the past 20 years. For example, it is very possible that factors such as child television viewing patterns or involvement in pre-school programs have fundamentally altered younger children's reading readiness, if not their advanced vocabulary capability. There is some evidence in the PIAT Reading Appendix Tables consistent with this premise. First, it should be noted that even though the mean standard scores are surprisingly high, the proportion scoring very well (i.e. two standard deviations or more above the mean) is not. Even a casual examination of the distribution of the scores suggests that the above average mean scores reflect the fact that the proportion with low scores -- one or more standard deviation below the mean -- is under represented. Thus, whatever the reason for this surprising distribution, its primary manifestation is in a pronounced under-representation of children scoring *very* poorly -- consistent with the notion that the floor of basic vocabulary knowledge (that component of the assessment linked with reading *readiness*) is higher than it used to be.

Finally, it may be noted (in Table 40) that the zero order correlations between Reading Recognition and other assessments generally parallel what was found for PIAT Mathematics. Correlations with the PPVT-R range from

.30 for six year olds to .56 for the oldest children. Correlations with the Digit Span assessment for children age seven and over are about .4. As already mentioned, it correlates fairly highly with PIAT Mathematics -- from .48 for five year olds to .63 for the oldest children, those aged nine and above. NLSY inter-assessment correlations with PIAT Math generally parallel what was found by the test developers (Dunn and Markwardt, 1970, Table 11); correlations with the PPVT-R are perhaps slightly lower than those reported elsewhere, but not by a substantial amount.

The Peabody Individual Achievement Test (PIAT) Reading Comprehension Assessment

The PIAT Reading Comprehension subtest measures a child's ability to derive meaning from sentences that are read silently. For each of 66 items of increasing difficulty, the child silently reads a sentence once and then selects one of four pictures which best portrays the meaning of the sentence. "While understanding the meaning of individual words is important, comprehending passages is more representative of practical reading ability since the context factor is built in, which plays an important role, not only in deciphering the intended meaning of specific words, but of the total passage. Therefore, the format selected for the reading comprehension subtest is one of a series of sentences of increasing difficulty. The 66 items in Reading Comprehension are numbered from 19 through 84, with item 19 corresponding in difficulty with item 19 in Reading Recognition." (Dunn and Markwardt, 1970, pp. 21-22).

The PIAT Reading Comprehension assessment is administered to all children whose PPVT age is five years and over *who scored at least 19 on the Reading Recognition assessment.* Children who scored less than 19 on Reading Recognition were assigned their Reading Recognition score as their Reading Comprehension score. If they scored at least 19 on the Reading Recognition assessment, their entry point to Reading Comprehension was determined by their Reading Recognition score. Entering at the correct location was, however, not essential to the scoring.

Basals and ceilings on PIAT Reading Comprehension as well as an overall non-normed raw score were determined in a manner identical to the other PIAT procedures. The only difference was that *children for whom a basal could not be computed were automatically assigned a score of 19.* Administration procedures are described on page CS-49 of the 1986 Child Supplement. As with the other PIAT tests, norming was accomplished in the late 1960s with all its attendant potential analytical problems. For a more complete description, users are referred to the *PIAT Manual.*

Using the PIAT Reading Comprehension Assessment.

As with the other PIAT assessments, the Merged Child-Mother File includes an overall non-normed raw score (C2814.) which can range from zero to 84, a normed percentile score (C2815.) and a normed standard score (C2816.). It should be noted that many younger children (age seven years and below) who received low raw scores could not be given normed scores because their scores were out of the range of the national PIAT sample used in the norming procedure. These children have been assigned -4 codes on the percentile and standard score variables. Researchers wishing to keep these children in their analyses will thus need to consider special decision rules. The way to identify these children, of course, is to cross-classify children by their raw score and standard score. They will be identified by having a valid raw score of zero or greater but a standard score of -4.

If one is using the PIAT Reading Comprehension assessment for analyzing five and six year olds, the proportion of children without a standard score is a major constraint which cannot be ignored. As may be noted by comparing Appendix Table A12.5 with Appendix Table A12.1, about 70 percent of five year olds and 30 percent of six year olds who had a *valid* raw score on Reading Comprehension could not be given normed scores. All of these children had raw scores below 18 and thus had their Reading Recognition score imputed as their Comprehension score; one solution for the youngest children is to limit analyses to Reading Recognition.

Parallelling procedures used with the other PIAT assessment, it was sometimes possible to clarify the score of a previously "unscorable" child by carefully examining the individual response patterns, particularly where the actual response for the "correct-incorrect" item had not been completed. In this way we were able to retrieve a number of cases not previously scorable. Depending on a researcher's individual inclination or need for precision, it may be possible to score, in an approximate manner, a number of additional children. In order to accomplish this, the researcher will need to access the Raw Child Assessment file, available from the CHRR. Researchers who plan to use this outcome extensively are encouraged to examine the individual item response patterns.

Data Quality of the PIAT Reading Comprehension Assessment.

As with the other PIAT assessments, Reading Comprehension is generally considered a highly reliable and valid assessment which, as noted earlier, has been extensively used for research purposes. This version was normed in the late 1960s and thus is subject to the same analytical constraints as the other PIAT assessments. In this regard, while the level of the standardized scores appears too high, it is likely that the patterning of the responses is probably reasonable. That is, higher scores still represent better outcomes in comparison with lower scores.

The PIAT Reading Comprehension subtest has a (one month) test-retest reliability which ranges from .61 for eighth grade children to .78 for first graders with an across-grade median of .64 (Dunn and Markwardt, 1970, Table 9). This is somewhat lower than was reported for the Mathematics and Reading Recognition subtests.

In terms of concurrent validity, as reported in Dunn and Markwardt, its linkage with the other subtests is somewhat erratic and appears quite sensitive to the grade level of the child. In the grade range of primary interest (grades five and below), correlations with PIAT Mathematics scores were generally low. Correlations with the PIAT spelling subtest ranged between .50 and .65. Overall correlations with the total PIAT score were more impressive -- .70 for first graders to .89 for third graders. In addition, not surprisingly, correlations between Reading Recognition and Reading Comprehension were generally fairly high (.61-.80). The Hammill and McNutt meta-analyses cited above found a .72 median concurrent correlation between Reading Comprehension and composite reading and .74 between Reading Recognition and Reading Comprehension.

Evaluation of the NLSY PIAT Reading Comprehension data suggests that a greater caution needs to be exercised when using this assessment than when using the other PIAT assessments. This is because it has a substantially higher non-completion rate. About 15 percent of all children could not be assigned a PIAT comprehension raw score; this varied from about 14 percent for black and white children to 21 percent for Hispanic children (see Table 18). The non-completion rate did *not*, however, vary systematically by maternal education as children of high school dropouts were as likely to complete the assessment as children of college attendees. Thus, the primary distinction in completion rates appears to be linked with English language difficulty and not social class *per se*.

The reasons for the relatively higher non-completion rate are not entirely clear. In some instances, a child was not administered either the Reading Recognition or the Reading Comprehension assessment even though the child was at an appropriate age. In other instances, a valid Reading Recognition score was available but the interviewer simply neglected to assess the child on Reading Comprehension. More typically, the Reading Comprehension assessment was attempted, but the interviewer did not ask a sufficient number of items to obtain a basal or a ceiling. An apparent common problem was where an interviewer entered the Reading Comprehension subtest at a fairly low level, apparently tested a child, but did not record all of the responses. In some instances, it appears that she did not record any answers until the child began to answer incorrectly (i.e. early correct answers were left blank and not coded). In other instances, it appears that an interviewer inadvertently did not record all incorrect responses (when defining a ceiling), but only the first and final incorrect responses. These are, however, only impressions based on observation of a limited number of cases. The primary reason for invalid scores is, however, less complex; in some instances interviewers simply failed to follow the administration procedures. As with the other assessments, the researcher is encouraged to examine the scoring patterns for the invalid responses. Depending on one's research objectives, some flexibility in rescoring might be possible.

Regarding inter-assessment correlations, NLSY correlations between PIAT Reading Comprehension scores and the PPVT-R are generally somewhat lower than those reported in previous studies (Dunn and Markwardt, 1970, Table 14). For example, NLSY correlations were in the .26 - .36 range for five through seven year olds (Table 40) compared with .47 for first graders reported in the PIAT manual. (Note that correlations for five and six year olds were based on the PIAT Reading Comprehension raw scores, as a large proportion of children this age could not be assigned normed scores.) NLSY correlations with PIAT Mathematics were in the .45 - .61 range whereas the correlations reported in the PIAT Manual ranged from .62 for third graders to only .22 for first graders and .28 for fifth graders.

PIAT References.

Dunn, Lloyd M. and Frederick C. Markwardt Jr. 1970. Peabody Individual Achievement Test Manual. Circle Pines, Minnesota: American Guidance Service Inc.

Hammill, D. and G. McNutt. 1981. The Correlates of Reading. Austin, Texas: PRO-ED.

Naglieri, J.A. and P.A. Harrison. 1982. "McCarthy Scales, McCarthy Screening Test, and Kaufman's McCarthy Short Form Correlations with the Peabody Individual Achievement Test." Psychology in the Schools 19: 149-155.

The Peabody Picture Vocabulary Test - Revised (PPVT-R)

"The PPVT-R measures an individual's receptive (hearing) vocabulary for Standard American English and provides, at the same time, a quick estimate of verbal ability or scholastic aptitude." (Dunn and Dunn, 1981). This assessment is given to all children age three and over. The PPVT-R assessment protocol may be found on pages CS-53 through CS-59 in the 1986 Child Supplement. For the actual diagrams, one must access the PPVT Manual (Dunn, Lloyd M. and Dunn, Leota M., *PPVT-R: Peabody Picture Vocabulary Test - Revised Manual for Forms L and M*, Circle Pines, Minnesota: American Guidance Service, 1981.). The assessment consists of 175 vocabulary items of generally increasing difficulty. The child nonverbally selects one of four pictures which best describes a particular word's meaning. A child's entry point into the assessment is based on his or her PPVT age. While administration of the assessment is relatively straightforward, minority, particularly Hispanic, completion rates are relatively low. This may partly reflect the fact that this assessment was only given in English in 1986.

Children enter the assessment at an age-appropriate level although this is not essential to the scoring. A "basal" is established when a child correctly identifies eight consecutive items. (An exception to this is in those cases where a basal cannot be established. In these instances, a child is given a raw score of one.) A "ceiling" is established when a child incorrectly identifies six of eight consecutive items. A child's raw score is determined by adding the number of correct responses between the basal and ceiling to the basal score.

The PPVT-R was standardized on a nationally representative sample of children and youth. The norming sample included 4200 children in 1979 and norms development took place in 1980 (Dunn and Dunn, 1981). For a comprehensive discussion of this norming procedure, researchers should refer to the *PPVT-R Manual for Forms L and M* (Dunn and Dunn, 1981). The *PPVT-R Manual* provided information about the linkage between raw scores and standard scores, and the percentile score is mechanically determined by the known linkage between the standard and percentile score.

The researcher should be aware of the fact that the norming tables in the PPVT-R manual did not allow for norming raw scores which are linked with standard scores below 40 (i.e. more than four standard deviations below the mean). NLSY children scoring below the minimum are automatically assigned a "zero." American Guidance Service has prepared a set of tables called *PPVT Supplementary Norms Tables* for standard scores below 40. This document is available from American Guidance Service, Publishers Building, Circle Pines, Minnesota 55014. These tables were not used for NLSY children scoring in this range because the basis of these lowest scores is unclear and the precision of the estimates somewhat uncertain. It should be noted (and this will be detailed further in the data quality section) that the NLSY sample of children has a mean score and standard deviation substantially different from the national norming sample. The lower mean is, of course, consistent with the fact that children of less educated and more disadvantaged mothers are over-represented. Because of this, it should be noted that the NLSY sample includes disproportionate numbers of children who score very poorly. Indeed, over 12 percent of the NLSY children have standard scores below 70 compared with the less than 3 percent in the national norming sample. For this reason, as well as the fact that very large percentages of minority children, who might have language difficulties on this English language assessment, scored very low, it was decided to let the user make decisions about how to include the very lowest scores (who theoretically represent less than .003 percent of the overall population but .8 percent of our sample). Related to this, the reader should recall that the nature of the linkage between standard scores and percentile scores is purely mechanical; all children with standard scores below 62 are assigned "real" percentile scores of zero, as they are in the bottom one percent of the national distribution of PPVT scores for children their age.

Using the PPVT-R.

The Merged Child-Mother File includes three PPVT scores; a non-normed raw score (C2818.), a normed standard score (C2819.) and a normed percentile score (C2820.). The general norming procedures are described above. The standard score is based on a national mean of 100 and standard deviation of 15. In addition, as also noted above, *children who have raw scores which would translate into standard scores below 40 are assigned a standard score of zero.* The reason for this is discussed in the above section.

Parallelling the other Peabody assessments, the invalid scores are essentially of two kinds; children who were inadvertently not administered the PPVT-R even though they were age eligible (this includes a small number whose English apparently was not adequate for this assessment), and children for whom either a basal or ceiling could not be derived, and thus could not be scored. As with the PIAT Math and Reading Comprehension, it was possible to improve the overall quality and completion level by utilizing information on the actual responses where the "correct - wrong" check item was not recorded by the interviewer. This case retrieval procedure is discussed more fully in the PIAT sections of this document. Also, as with the PIATs, the user is reminded to use the PPVT age variable (C2817.) when controlling for or stratifying by age when using this assessment. Researchers who plan to use the PPVT-R data extensively are encouraged to examine the individual responses provided on the Raw Item Assessment file. Depending on an individual researcher's objective, it may be possible to increase one's effective sample by determining approximate (e.g. within 2 or 3 points of a "correct" score) scores for some additional children.

Data Quality of the PPVT-R Assessment.

The PPVT-R is among the best established indicators of verbal intelligence and scholastic aptitude across childhood. Since 1978, it is the fourth most frequently cited test in Mitchell's (1983) *Tests in Print.*

Numerous studies have replicated the reliability estimates from the PPVT-R's standardization sample (4200 children between two years, six months and eighteen years eleven months): Dunn and Dunn (1981) report a median split-half reliability of .80 (ranging from .67 to .88), a median parallel form reliability of .70 (ranging from .50 to .87), and a median nine to thirty-one day test-retest reliability of .78 (.52 to .90). Goldstein, Collier, Dill, and Tilis (1970) reported a twenty-one month test-retest reliability of .61 among 160 disadvantaged three to seven year olds, and Costello and Ali (1971) found a two week retest reliability of .77 among thirty-six black preschoolers, using the original PPVT assessment.

The PPVT-R demonstrates a high construct validity with a variety of intelligence tests. Its median correlation with other vocabulary tests was .71 (based on 55 criterion validity coefficients, ranging from .20 to .89); with other individual intelligence tests it ranged from .38 to .72 (based on 291 correlations ranging from -.16 to .92). Its correlation was higher with the Binet and Wechsler tests than with less well established tests; and correlations were higher with verbal intelligence (.66 to .71) than with performance (.46 to .65; Dunn and Dunn, 1981).

Because it demonstrates high predictive validity with a variety of achievement measures, combined with other information, the PPVT is an extremely important predictor of early and middle school outcomes. Median correlation with math achievement was .50 (based on sixteen correlations ranging from .27 to .77 with the Wide Range

Achievement Test (WRAT), California Achievement Test (CAT) and PIAT); with language achievement it was .44 (sixteen correlations, from .02 to .66 with the WRAT, PIAT, CAT and with Metropolitan Achievement Test (MAT)); with reading comprehension it was .63 (seven correlations from .42 to .70 with the CAT and PIAT); and with reading recognition it was .38 (WRAT) and .52 (PIAT) (fourteen correlations ranging from .01 to .72; Dunn and Dunn, 1981).

Zigler, Abelson, and Seitz (1973) found an inverse relationship (r = -.53) between the magnitude of the increased IQ on retest and the initial IQ estimate, indicating that a disadvantaged preschoolers' measured intelligence is influenced by anxiety and sociability during assessment, which are emotional patterns distinct from cognitive deficits and are measured by the temperament and interviewer relationships between sociability and cognitive performance.

Focusing on the NLSY sample of children, an overall completion rate of 87 percent was obtained for the PPVT-R. Nonresponse varied considerably across racial/ethnic groups as valid PPVT-R scores were obtained for 90 percent of white children, 86 percent of black children, and only 81 percent of Hispanic children (Table 18). The lower Hispanic rate partly reflects the fact that the PPVT-R is an English language assessment. Given the moderately high non-response rate, researchers are cautioned to consider the possibilities for bias as the invalid responses disproportionately include Hispanic youth as well as youth of mothers who had not completed high school.

Examining those children for whom scores are available, major differentials in PPVT scores may be noted (see Appendix Tables A13.1 through A13.10). Black and Hispanic children score substantially lower than white youth -- and these differentials are apparent for both older and younger children. Not surprisingly, the differentials by maternal education are substantial. Differentials by the age of the mother at the birth of the child are also considerable. Thus, the face validity of the instrument is relatively high, although, of course, the reasons for these differences are subject to varying interpretations.

Parallel multivariate analyses examining the independent determinants of a child's PPVT score for the younger (age three or four) children in the sample indicate that race/ethnicity, maternal education, and low family income remain significant independent predictors of PPVT score even when a full range of other socioeconomic and demographic factors are included in the regression analyses (Mott, 1988, cited in MSD Section).

Users may note one very important distinction between the PPVT-R and PIAT scores -- a difference of particular interest to those who plan to concurrently use both assessments. Whereas the PIAT assessments had surprisingly high mean scores (see PIAT discussions) for a sample which includes a disproportionate number of disadvantaged children, the PPVT-R means are substantially below those of the norming sample. The NLSY PPVT sample has a mean of about 92 and a standard deviation of 19. Only the white sample and the sample of children born to mothers with more than 12 years of school have means approaching the overall national average of 100. This large differential between the NLSY PIAT and PPVT-R mean scores undoubtedly at least partly reflects the fact that the PPVT-R norming sample is relatively contemporary (1979) whereas the PIAT norming sample is from the late

1960s. That the NLSY relatively disadvantaged sample has a mean significantly below that reported for a fully representative national sample of children is not surprising. Whether there are other causes for this difference is not known at this time, but the question warrants further evaluation. In this regard, it should be noted that even the most "advantaged" categories of NLSY children -- those who are young in 1986 and who have mothers who have attended college or who were born to relatively older mothers -- seem to have an under-representation of relatively high PPVT-R scores.

Turning now to the question of internally measured concurrent validity, it may be noted in Table 41 that the zero order correlations between NLSY PPVT-R scores and the various other assessments are frequently substantial and generally in line with what has been found in other studies. Depending on the child's age, the correlations between PPVT-R and PIAT Mathematics ranged from .47 to .57, with PIAT Reading Recognition from .30 to .56 and with PIAT Reading Comprehension from .26 to .60. Generally, the correlations were higher for older children. For younger children (between the ages of three and seven), the correlations with the Verbal Memory word/sentence assessments ranged between .33 and .41 and with the more complex Verbal Memory "story" assessment from .21 to .34. It is also of some interest to note that the PPVT-R assessment correlated fairly well with the HOME cognition (.28 - .43) and emotional support (.20 - .38) subscales, suggesting the potential importance of the linkages between environmental influences and a child's PPVT-R score. There is also some support for the notion that these linkages are stronger for younger children.

References.

Costello, J. and F. Ali. 1971. "Reliability and Validity of PPVT Scores of Disadvantaged Preschool Children." Psychological Reports 28: 755-760.

Dunn, L. and L. Dunn. 1981. PPVT-R Manual. Circle Pines, MN.

Goldstein, L., A. Collier, J. Dill, and H. Tilis. 1970. "The Effect of a Special Curriculum for Disadvantaged Children on Test-Retest Reliabilities of Three Standardized Instruments." Journal of Educational Measurement 1: 171-174.

Lamb, M., S. Gam, and M. Keating. 1981. "Correlations between Sociability and Cognitive Performance Among Eight-Month-Olds." Child Development 52: 711-713.

Plant, W.T. and M.L. Southern. 1972. "The Intellectual and Achievement Effects of Pre-School Stimulation of Poverty Mexican-American Children." Genetic Psychology Monographs 86: 141-173.

Radin, N. 1971. "Maternal Warmth, Achievement Motivation, and Cognitive Functioning in Lower-Class Pre-School Children." Child Development 42: 1560-1565.

Robertson, G. and J. Eisenberg. 1981. PPVT-R Technical Supplement. Circle Pines, MN: American Guidance Service.

Zigler, W.E., W. Abelson, and V. Seitz. 1973. "Motivational Factors in the Performance of Economically Disadvantaged Children on the PPVT." Child Development 44: 294-303.

The Child Supplement Interviewer Remarks Sections

At the conclusion of each section of the Child Supplement, there is a series of interviewer remarks which are meant to clarify the environmental conditions which existed while a particular assessment was being given. These remarks are all grouped together on the merged Child-Mother file immediately following the Child Supplement Section 10 (PPVT-R) scores. The items from Section 11 of the 1986 Child Supplement, which include a summary evaluation of the testing conditions completed by the interviewer immediately after the entire interview, may be found in the documentation as a subset of the Temperament items (see C2672.11 - C2672.43). The interviewer remarks specific to each assessment are listed as reference numbers C2900. through C3123. in the merged Child documentation. Users are encouraged to use these interviewer observations when evaluating quality issues associated with assessment reliability. It may be noted that in the vast majority of cases, interviewers indicated no particular problem; they viewed the interviewing environment as quite appropriate, indeed positive. Where an interview ended prematurely, the reason for this premature termination is noted in the remarks section. Based, of course, on one's research intentions, individual researchers can choose to exclude certain children from their study. For example, children who experienced significant interference or who appeared tired (perhaps because it was the last of several assessments which the child had taken), could be excluded from analyses. In addition, users may wish to check if the interviewer noted if the child had any particular language or comprehension difficulties.

In some instances the interviewers neglected to complete the remarks section. Thus, *users should proceed with caution when using an interviewer remarks section which suggests that no individuals were present, since this was an unlikely scenario, particularly where small children were being assessed.* Particularly with respect to those interviewer remark questionnaire items which define the presence or absence of parents or siblings, a positive response (i.e., one or greater) indicates that that particular relative was present. However, the absence of that relative was typically not coded zero. Thus, the category "missing", which is coded -6, includes all categories of children *other than* (1) those situations where a particular relation was acknowledged to be present, or (2) those cases where the mother was not interviewed in 1986 (coded -5).

1988 NLSY Data on Children

The 1988 NLSY survey includes considerable data collection which will enhance the value of the existing maternal and child data in a number of important topical areas of particular interest to the social science and child development community. These data should be available to interested researchers in early 1990, prepared in essentially the same form as the 1986 NLSY child data.

The 1988 data collection effort repeated many of the assessments that were included in the 1986 survey. More precisely, all children took the (same) assessments for which they were age-eligible in 1988 with the following exceptions: (a) children who were age-eligible for Memory for Location, Digit Span, or Verbal Memory; and who had already taken this assessment in 1986; and (b) children who were below age 10 or age 12 and above who had already taken the PPVT in 1986 did *not* repeat those assessments in 1988. Children who were eligible for the first time for these three assessments, and who did *not* take them in 1986 completed these assessments. In addition, 10 and 11 year olds who had already taken the PPVT and Digit Span in 1986 *did* repeat the assessments in 1988. These children form the basis of an "index child" group. In subsequent survey rounds, it is anticipated that 10 and 11 year olds would continue to receive the PPVT and Digit Span assessment. This ultimately will provide a base year common achievement measure for all children in the survey.

In summary, all children who were age-eligible to take (1) Body Parts; (2) What I Am Like; (3) PIAT Math and Reading; (4) the HOME; (5) motor/social development; (6) Behavior Problems; and (7) How My Child Acts took the appropriate assessment(s). Only children who were age-eligible in 1988 to take Memory for Location, Verbal Memory, and PPVT and Digit Span who had *not* completed these assessments in 1986 took these assessments in 1988. Finally, all 10 and 11 year olds repeated the PPVT and Digit Span assessments in 1988. These assessments were given in the same manner as in 1986 and the protocols were generally as indicated in the 1986 mother and child supplements, with some revisions suggested by the 1986 results.

There are approximately two years and three months between the two child assessment dates. The assessment material collected in 1986 permits researchers to consider the *level* of a child's intellectual and socio-emotional development in relation to the full range of background information available. However, except by making longitudinal inferences from cross-sectional data, the 1986 assessment cannot be used directly to infer how child *development* is linked with 1986 or prior cross-sectional attributes. To properly measure how child *development* is linked with other factors requires the repetition of the development outcome information at more than one point in time. That is, at the micro disaggregated level of analysis it is essential to measure how *changes* in intellectual or socio-emotional development are linked to other attributes and changes in other attributes. For this reason, many of the child cognitive achievement and socio-emotional measures were repeated in the 1988 survey round. It was deemed less important to repeat the assessments that are generally considered to have a large aptitude (as opposed to achievement) component since normed scores on these assessments should remain relatively stable over time. For this reason, (as well as because of cost constraints) some of the assessments were not repeated for all children.

In addition to updating the maternal and child health information for children born between the 1986 and 1988 surveys, the 1988 survey round also included a variety of new data elements relating to the children of the NLSY women. First, a series of questions on lifetime injury experiences of the children with several extensive

probes relating to injuries during the past year were included. These will complement the other illness/physiological development items. The 1988 survey round also included a battery of questions (addressed to both children age 10 and over and their mothers) addressing a variety of issues related to the child's interaction with parents and peers, his or her school success, and his/her evolving sexuality. This information will provide crucial insights into how prior family and maternal behaviors are linked with a variety of preadolescent and adolescent outcomes and how these outcomes are linked with longer and shorter-term changes in cognitive and emotional development. Specifically, the 1988 survey round included a series of questions probing into child-parent interaction, child employment, school satisfaction and success, religion and religiosity, substance use, interaction with peers, attitudes toward the future, and sexuality.

A more abbreviated series of new questions was addressed to the child's mother in 1988. These questions focused on the child's school behavior and activities, general child behavior, information about a parent's dating behavior (if not married) and a few items about father-mother interaction. It is anticipated that the addition of these items will provide important insights into the processes associated with the transition to adolescence, and how social, intellectual, and physiological factors may impede or contribute to early sexual activity or premature school termination.

6

THE NLSY CHILD DATA TAPES

This section provides technical information on the NLSY Child data files that are currently available to the public. The major characteristics of the data files are described, suggestions for file manipulation and data management are outlined, and tape ordering information is provided. Sample SAS programs for users who wish guidelines for combining data from the Merged Child-Mother data file with either the Child Assessment Raw Item file or the NLSY Main file are detailed in Appendix E.

Current NLSY Child Data Tapes

The 1986 Child Assessment Raw Item tape contains 1500 variables that correspond directly with the 1986 Child and Mother Supplements for the 4971 NLSY children who were assessed in 1986. The Raw Item variables reflect the data as originally collected in the field, with no significant editing or cleaning. The tape is only available as a raw file written either in EBCDIC or ASCII format.

The 1986 NLSY Merged Child-Mother Data file, available either as a raw file or SAS system file, contains 3,402 variables on the 5,876 children born to NLSY female respondents who were identified as mothers by 1986. This tape features considerable background information on the mothers of the children as well as prenatal, postnatal, childcare, health, and assessment data on the children themselves. Unlike the Raw Item file, the Merged Child-Mother tape also contains a series of summary scores based on the 1986 assessment data.

Tape Format

The NLSY Child data tapes are written in EBCDIC or ASCII format. The Merged Child-Mother file is also available as a SAS system file. If SAS transport files are ordered, it is assumed that users will convert these files to local SAS system files. The space allocation on all systems is very important for creating SAS system files. Users should consult the current SAS USER'S GUIDE© about file size, memory, and work space requirements.

How to Manipulate the Child Files

Appendix E provides various types of examples on how to merge or extract data on the Child data files. Appendix E1 includes a sample SAS program for users wishing to merge a mother-based file taken from the NLS Youth

main dataset with the Merged Child-Mother file. For details on how to create an extract of variables from the NLSY main file, see the section on Public Use Tapes (pp. 124-126) in the 1988 *NLS Handbook*. Users who prefer to use the Merged Child-Mother file for mother-based analyses can find SAS statements in Appendix E2 for extracting a file of mothers from the NLSY Child-Mother file. A procedure for merging data from a *SAS version* of the Merged Child-Mother file with the Child Assessment Raw Item file is suggested in Appendix E3. These same procedures are outlined in Appendix E4 for users needing guidelines on how to merge a *raw version* of the Merged file with the Raw Item file.

Standardized Coding Conventions

In order to facilitate data processing, the following coding conventions have been followed:

(1) With the exception of child variables C256., C261., C266., C271., and C276., uniform non-response codes have been utilized.

-5	Non-interview
-4	Valid skip
-3	Invalid skip
-2	Don't know
-1	Refusal

Missing values for the above five Child Sibling variables are explained in Section 4.

(2) Dichotomous variables of a yes/no variety are uniformly coded ("Yes" =1; "No" = 0). Other dichotomous variables have frequently been reformulated to permit this convention to be followed.

(3) To insure respondent confidentiality, income and asset variables exceeding particular limits are truncated so that values exceeding the upper limits are converted to a set maximum value. For specific information on the yearly income levels, please consult the discussion of Income and Earnings of Mother and Her Spouse in Section 4 of this Handbook.

Tape Ordering Information

Persons interested in purchasing an NLSY data file should complete the NLS Tape Order Form which can be found at the end of this section. Those wishing to purchase *extra* documentation items should attach a copy of the Documentation Order Form which appears at the end of Section 7 of the Handbook.

NLSY files are available in a variety of coding conventions, labeling and density options. Since NLSY tapes are normally processed at 6250 BPI, users needing lower density should contact the Center's Data Processing Unit. Users should specify on the order form whether they wish a SAS IBM file or a SAS Export file. Documentation for the SAS files is the same as that provided for the raw files except that SAS variable names are used instead of column numbers that identify variable tape locations. Details on the documentation that accompanies each file are discussed in Section 7 of this Handbook.

Prices for the various NLSY files are listed on the NLS Tape Order Form at the end of this section of the Handbook. A check or purchase order must accompany each order. All tape orders include complete sets of documentation. Individual documentation items or additional sets of documentation can be purchased by completing the Documentation Order Form. These prices are subject to change.

Guidelines for Management of NLSY Data Files

Many researchers who acquire the files revise them by reformatting, subsetting, or creating new variables. Since CHRR can accept responsibility only for the tapes and documentation which it has supplied, users who intend to modify and/or copy the data should develop a set of standard operating procedures to guarantee the integrity of the tapes furnished by CHRR. The following guidelines are suggested:

(1) A copy of each original tape should be made as soon as possible. Changes should never be made to a tape received from CHRR.

(2) All modifications should be carefully documented; programs and program specifications should be saved.

(3) New output tapes should be used for all subsequent revisions.

(4) The addition of locally created variables will usually entail expansion of the logical record length. Since many users will later wish to obtain future versions of the data files from CHRR, which will contain both new variables and corrections to existing variables, user-designed modifications should be planned with flexibility in mind.

(5) In subsetting, interrelationships among variables should be kept in mind.

(6) The codebook should be kept up to date.

(7) Any technical problems encountered in using a data tape should be reported to the NLS Public Users Office as soon as possible.

Current NLS Main Youth Data Tapes

The following is a brief list of the data tapes related to the NLS Main Youth data that are currently available. Users interested in more information on these files should consult the current *NLS Handbook* or contact the CHRR NLS Public Users Office, (614) 263-1682, USERSVC@OHSTHR.

(1) NLS Youth Tape, 1979-1987 or current year only - comprehensive files for each NLSY respondent that reflect each year's total number of variables as well as a number of created variables on such key constructs as marital status, family income, employment status, highest grade completed.

(2) NLSY Work History Tape, 1979-1987 - a week by week longitudinal record of the labor force attachment of each NLSY respondent from 1/1/78 through the current survey date.

(3) NLSY Geocode Tape: 1979-1982 - approximately 2200 geographic and environmental variables including: state, county, and SMSA of current residence; all residences since 1/1/78; state or country of birth; current employer's state and county location; and a variety of variables extracted from the 1972 and 1977 *County and City Data Book.* This tape as well as the 1983-1987 tape described below can only be made available to researchers who have their institution complete the confidentiality guarantee form available from CHRR Public Users Office.

(4) NLSY Geocode Tape, 1983-1987 - about 70 variables for each survey year including: the state, county, and SMSA/MSA of current residence; location and FICE code of most recent college; location of military base; and a select number of environmental variables from the 1983 *County and City Data Book.*

(5) NLSY Women's Support Network: 1983-85 - Created by NORC, this file details the geographic proximity of the relatives, friends, and acquaintances of 6308 NLSY females interviewed during 1983-85.

NLSY Tape Order Form

Researcher: _____
Organization: _____
Department: _____
Address: _____
_____
City: _____ State: _____ Zip Code: _____
Telephone: _____

If shipping and/or billing address differs from the address listed above, please indicate below and attach correct address labels to this order form.

[ ] Different Shipping Address [ ] Different Billing Address

NLSY DATA FILES

Please indicate the NLSY data files you wish to purchase. Complete documentation is included with each order.

[ ] NLSY Files	1979-87				$ 350
[ ] NLSY SAS Files	1979-87	Specify:	[ ] IBM SAS or	[ ] SAS Export	$ 350
[ ] NLSY Files	1987 Only	Specify:	[ ] Multiple File or	[ ] Flat File	$ 100
[ ] NLSY Work history	1979-87				$ 125
[ ] NLSY Geocode	1979-82				$ 50
[ ] NLSY Geocode	1983 -87				$ 50
[ ] NLSY Child Assessment Raw Item File	1986				$ 100
[ ] NLSY Merged Child-Mother Data File	1979-86				$ 150
[ ] NLSY SAS Merged Child-Mother File		Specify:	[ ] IBM SAS or	[ ] SAS Export	$ 150
[ ] Other(s):	_____				$ ___
[ ]	_____				$ ___

Please circle the appropriate tape specifications. All NLSY tapes are processed at 6250 BPI. If a lower density is needed, please contact the Center's Data Processing Unit at the telephone number/BITNET address listed below.

Code Convention		Label			Maximum Blocksize	
EBCDIC	ASCII	IBM Standard	ANSI	None	16K	32K

Please return this order form with purchase order or payment to: the NLS Public User's Office, Center for Human Resource Research, 650 Ackerman Road, Suite A, Columbus, Ohio 43202 (614-263-1682 or USERSVC@OHSTHR).

FOR CHRR USE ONLY

Date Received	P.O. #	Invoice #
Total Order	Amount Paid/Check #	Date Mailed

7

NLSY CHILD DOCUMENTATION

The following section describes the NLSY Child documentation packages and the primary components of the NLS main Youth documentation. One set of hardcopy documentation is provided to data tape purchasers. Extra sets of documentation and individual documentation items are available at the prices listed on the documentation order form. Select documentation items (codebook and numeric) are also provided on the data tape. The Center encourages researchers who are considering the applicability of the NLSY Child data for their research needs to purchase, at a minimum, a set of assessment instruments. Documentation purchase prices will be subtracted, upon request, from the cost of any subsequent tape ordered.

This section concludes with a Quick Reference Guide to terms utilized throughout the NLSY Child documentation. An NLS Documentation Order Form can be found at the end of this section.

1986 NLSY Child Documentation

Child Assessment Instruments

Copies of the Child Supplement and Mother Supplement Questionnaires used in the field are provided with each data tape order. The discussion of NLSY Child Interview Materials in Section 2 of this Handbook provides complete descriptions of these instruments.

Child Codebooks

The codebook is the principal element of the documentation system containing information that is intended to be complete and self-explanatory for each variable in the file. The codebook depicts for each variable: a child reference number, variable description, coding information, frequency distribution, the variable location, as well as a reference to the location in either the Mother or Child Supplement.

Separate codebooks are available for both the Merged Child-Mother file and the Child Assessment Raw Item File but they differ in the way they identify variables. The Merged Child Codebook identifies variables with sequential "C" reference numbers while the Raw Item File Codebook uses a prefixed deck and column number that refers to specific questions in the Child and Mother supplements. The Merged Child-Mother Codebook also specifies whether variables are constructed or drawn directly from the main Youth file. An asterisk (*) in parentheses next

to the child reference number indicates that a variable is created from several inputs. Any variable based directly on an item from the main file is keyed with the corresponding Youth "R" reference number as well as the question number from the main Youth survey instrument in which it appeared.

Merged Child-Mother Numeric

This index is a numerically arranged listing of all variables as they appear within the file. The order of the variables on the index generally follows a topical sequence. These groups of variables are described in detail in Section 4 of this Handbook. The numeric includes the following information for each variable: the child reference number, the NLSY main file reference number where relevant, variable description, and variable location on the tape. There is no numeric index for the Child Assessment Raw Item File.

Merged Child-Mother SAS Documentation

Users who order the Child-Mother data in the form of a SAS system file are supplied with a Codebook and a Numeric Index that match the tape. Variables are named by their reference numbers (zero filled): C 100. is identified as variable C0010000 and C1098.10 becomes C0109810. The actual data file includes variable labels which are 40 character versions of the longer titles that appear in the Codebook and numeric. No informats or PROCFORMAT values are included on the tape. SAS system files can be read with "SET", "MERGE", and "UPDATE" commands and by "DATA=", as in the PROC CONTENTS example included with the tape.

Quick Reference Guide: NLSY Child Documentation

The following are brief definitions of the various types of information which appear within the NLSY Child Codebook and numeric indices. Wherever possible, reference is made within each definition to actual items found in the Child Codebook.

Coding Conventions (Missing Responses)

Five missing response coding conventions are utilized within the NLSY Child data: (1) noninterview (-5); (2) valid skip (-4); (3) invalid skip (-3); (4) don't know (-2); and (5) refusal (-1). Exceptions to this pattern are noted in Section 4 of this Handbook, Description of the NLSY Child Data.

Coding Information

Appearing below the variable description in each codebook entry is the set of legitimate codes that a variable may assume along with a text entry describing the codes. Code entries can either be:

(1) discrete (categorical), as in the case of the NLSY Child example

C 696. EMPLOYMENT STATUS RECODE OF MOTHER 81 INT COLS/FMT
2628/2634 (7)

1	WORKING
2	WITH JOB NOT AT WORK
3	UNEMPLOYED
4	KEEPING HOUSE
5	GOING TO SCHOOL
6	UNABLE TO WORK
7	OTHER
8	IN ACTIVE FORCES

or

(2) continuous (quantitative), as in the case of the example

C 697. TOTAL HOURS WORKED BY MOTHER DURING SURVEY WEEK 81 INT

ACTUAL HOURS	
42	1-4
78	5-9
122	10-14
108	15-19
175	20-24
129	25-29
235	30-34
225	35-39
729	40-44
113	45-49
98	50+

Where coding information is especially complex and detailed, codebook entries will refer the user to the various NLSY documentation attachments.

Derivations

In certain cases, the Codebook will refer the user to a variable creation appendix (such as NLSY Appendix 2, Total Net Family Income) for the decision rules that were used in creating a variable, since the creation is too extensive to be included in the Codebook.

Description of Variable

Adjacent to each child reference number in the Codebooks and the Numeric is a phrase which: (1) provides a brief summary of the content of the variable, (2) serves as a heading for the cases which appear below it, and (3) represents the variable within the numeric index. Several conventions have been used in developing the variable descriptions:

(1) Use of the phrase "XX INT," as in the Codebook example above (81 INT), means that the variable relates to the indicated *survey year*. When a date follows a verbal description of a variable and is preceded by the preposition "in 19XX", the date identifies the calendar year for which the relevant information was collected. For example:

TOTAL INCOME FROM ALIMONY OR CHILD SUPPORT RECEIVED IN 1979 80 INT is the amount of support received in the 1979 calendar year as reported in the 1980 survey.

To ascertain exact time periods covered, users should consult the wording of the questionnaire item and the time at which the survey was conducted.

(2) Dichotomous variables are usually put in question form. For example:

DOES CHILD HAVE LEARNING DISABILITY? 86 INT

(3) Universe or subsetting information may appear in parentheses in the title. For example:

REASON MOTHER BEGAN LOOKING FOR WORK (UNEMPLOYED) 79 INT

(4) The word *KEY* in the variable description denotes constructed variables taken directly from the NLSY main file. These items, which are widely used and difficult to create, are provided routinely to all users of the NLSY data.

Frequency Distribution

In the case of discrete (categorical) variables, frequency counts are normally shown to the left of the code categories. In the case of continuous (quantitative) variables, a distribution of the variable is often presented using a convenient interval. The format of these distributions varies. In the case of the example, C 697. TOTAL HOURS WORKED BY MOTHER DURING SURVEY WEEK (cited in the Coding Information subsection above), the frequency count is straightforward. There are eleven categories; the maximum category shown is "50+" representing 50 hours or more, for which there is a frequency count of 98.

Questionnaire Item or Questionnaire Location

For variables in the Child-Mother file that have a direct connection to a particular item in the NLSY main file, the Merged Child-Mother Codebook includes a reference to the main survey questionnaire location. For example, child variable C 181. is linked to question S01Q01A in the 1979 main Youth questionnaire. Three questionnaire location conventions have been used in assigning main Youth question numbers:

(1) For the 1979 variables, the NLS main Youth questionnaire item refers to the section and question number within that section. For example, (SO2Q01A) refers to Section 2, question 1A.

(2) Questionnaire items for the years 1980-82 are referenced accordingly: SO2D0415 refers to Section 2 of the questionnaire (SO2); deck 4 (D04); and column 15 (15).

(3) Beginning with the 1983 survey, questionnaire items are identified simply by the deck and column number of the variable in the questionnaire: Q0163 refers to deck 1, column 63.

For a detailed discussion of this numbering system in the NLSY main Youth documentation, see the NLSY DOCUMENTATION section of the current *NLS Handbook.*

If an NLSY child variable is not based directly on an item from one of the NLS main Youth survey instruments, the parentheses in the first line of each Codebook entry normally reserved for a main Youth cross reference are filled by an asterisk (*). The following categories of variables generally have no main Youth cross reference numbers: (1) assigned identification numbers for the child and related NLSY respondents, (2) all derived or constructed ("created") variables, and (3) variables from the following special surveys: Profiles (ASVAB), the School Survey, and the Transcript Survey.

Location information for the questionnaire items are depicted within the main Youth survey instruments as follows. The deck numbers are printed at the top of each page in the survey instruments beginning in 1980. The column numbers are printed to the left of the questions. If the variable contains more than one digit, the column reference is to the first number in the column range for that variable.

Reference Number

The reference number is a unique identification number assigned to each variable which determines its relative position within the Codebook and which will remain constant through subsequent revisions of the files. The format of the child reference number in the Merged Mother-Child documentation is CXXXX.XX for the Child data and RXXXXX.XX for the NLS main Youth. The "MS" and "CS" reference numbers in the Codebook and numeric of the Child Assessment Raw Item File directly reflect the deck and column number of the Mother or Child Supplement, preceded by the appropriate 2-letter prefix. The reference number is the way to identify a particular variable

when communicating with CHRR. If one obtains a SAS version of the data, there are two implied decimal places; the reference numbers are in the form RXXXXXXX and CXXXXXX.

Valid Values Range

Depicted below the frequency distribution in the Codebook is information relating to the range of valid values for that particular distribution. "MINIMUM" indicates the smallest recorded value, exclusive of missing values, and "MAXIMUM" indicates the largest recorded value. In the case of the "TOTAL HOURS WORKED" example above, the minimum is 1 and the maximum is 96.

Variable Location

NLSY Codebook entries depict the variable location directly below the label "COLS/FMT." In the example, C696. EMPLOYMENT STATUS RECODE 81 INT, the numbers 2628-2634 (7) in the Codebook indicate that the variable is in columns 2628-2634 and has a length of seven.

NLSY Main File Documentation Items

The following is a brief discussion of the items from the complete set of NLS Youth main file documentation that are relevant to the Child data. Many of these documents are mentioned in various parts of this Handbook, particularly in the discussion of the variables on the Merged Child-Mother file. Several references to NLSY main survey Attachments and Appendices appear in the Merged Child-Mother Codebook. Users who wish a detailed account of the entire set of NLS main Youth documentation, of which only a subset is discussed below, should consult the current *NLS Handbook* as well as the list that appears on the NLS Documentation Order form at the conclusion of this Section.

NLSY Survey Instruments

A copy of each survey year's questionnaire, the various versions of the household interview forms, yearly income table, the employer supplement, and jobs calendar are provided with each data tape order.

NLSY Background Materials

Technical Sampling Report - Youth Survey contains detailed descriptions of the procedures utilized to select the civilian and military youth samples including weights and standard errors for the initial survey years.

Technical Sampling Report Addendum presents in tabular form the standard errors and deft factors for the 1982-1987 survey years.

Household Screener and Interviewer's Manual contains: (1) the instructions given to NORC interviewers conducting the 1978 preliminary screening of households from which the two civilian youth samples were drawn; (2) question by question specifications for the household screener interview form; and (3) a completed sample screener.

NLSY Glossary of Terms provides definitions of over 80 key terms and acronyms used throughout the NLSY documentation and related publications.

NLSY Codebook

The NLS main Youth Codebook depicts for each variable: a reference number, variable description, coding information, frequency distribution, the file name and variable location, and a reference to the questionnaire location. Derivations for certain created variables as well as selected universe information are also provided.

NLSY Numeric Index

This index is a numerically arranged listing of all variables as they appear in each of the NLSY files. The main Youth numeric includes the following information for each variable: the reference number, variable description, survey year, questionnaire number, and variable location.

NLSY KWIC Index and Dictionary of Keywords

The "keyword-in-context" index has been designed to assist users in identifying and locating variables relevant to their research interests. The document is an alphabetically arranged list of the keywords, and under each, a list of all variables by KWIC title whose descriptions contain the keyword. In addition, the index provides the following cross-referencing information: the reference number, questionnaire number, survey year, and the record type name and variable location for each NLSY variable. To facilitate use, a Dictionary of Keywords cross-referenced with related terms is provided.

NLSY Main Survey Attachments and Appendices

Supplementary coding categories and derivations for selected variables can be found within the various NLSY attachments and appendices. The items in the subset listed below are referred to directly in the Child documentation.

Attachment 3 - Industry and Occupation Codes: a compilation of: (1) The 3-digit 1970 Census classifications, (2) the 3-digit 1980 Census codes which have been used, beginning with the 1982 main survey, to classify most current or most recent job, and (3) the 1977 military occupational specialty codes used to classify responses to the 1980-1985 questions on military jobs and military occupations.

Attachment 8 - Health Codes: a modified version of the International Classification of Diseases (ICD-9) codes [International Classification of Diseases, Volumes 1 & 2, Geneva, WHO, 1977-1978] which were used, during survey years 1979-1982, to classify types of health problems delimiting the amount or kind of work a respondent could do. Also included is a list of numeric codes identifying the parts of the body affected by health problems.

Attachment 103 - Religion Codes: the various denomination categories used to code the 1979 religion of respondent questions and the 1982 religion questions.

Attachment 106 - Profiles of American Youth: general and technical information on the 1980 administration of the ASVAB (Armed Services Vocational Aptitude Battery) to NLSY respondents. Included in this attachment are technical notes on the ASVAB scale scores, an annotated bibliography of DOD publications, an example of the test score report, and various brochures disseminated to participating respondents.

Appendix 1 - Employment Status Recode (ESR) Variable Creation 1979-87: the adapted version of the fortran program used to create this measure of main labor force activity during the survey week.

Appendix 2 - Total Net Family Income Variable Creation 1979-87: the code used to create this key income variable for each survey year.

Appendix 3 - Job Satisfaction Measures 1979-82: background information and yearly reference numbers for both the scale items and global satisfaction measures of the modified Quality of Employment Survey scale administered in the 1979-1982 surveys. Additional references and a methodology for constructing the full scale are also presented.

Appendix 4 - Job Characteristic Index 1979 & 1982: background information, reference numbers, questionnaire locations, and additional references for the job complexity questions asked in these two survey years.

High School & Transcript Surveys Codebook: background information on the sample design, field work, and types of variables collected during the three rounds of this special survey. Included is a transcript survey codebook, instructions for coding courses, course codes, copies of the transcript coding form and school questionnaire, as well as additional references to other technical reports prepared by the sponsoring agency, the National Center for Research in Vocational Education.

Optional NLSY Documentation Items

The following items are not automatically provided as part of the NLSY main documentation package but are available upon request for a fee:

(1) Interviewer's Reference Manuals which reproduce facsimiles of survey instruments (the questionnaire, employer supplement, household interview forms, face and information sheets, etc.) which include the detailed administration instructions for the NORC interviewers.

(2) Flow Charts for each survey year which graphically depict the often complex skip patterns of each survey instrument.

NLSY Special File Documentation Items

The NLSY special data tapes, i.e., the Work History file, the 1979-1982 and the 1983-1987 Geocode tapes, and the Women's Support Network file are accompanied by their own documentation. Users interested in these files and their documentation should consult Section 3 of the current *NLS Handbook*.

NLS Documentation Ordering Information and Order Form

Various components of the NLS documentation can be purchased separately by those investigating the applicability of the NLS for their research needs. The Documentation Order Form, which can be found at the end of this section, presents available documentation packages and prices. Documentation purchase prices will be subtracted, upon request, from the cost of any subsequent data tape ordered.

NLS Documentation Order Form

Name:_____
Organization:_____
Department:_____
Address:_____
City_____State:_____Zip:_____
Phone: (_____)_____

NLSY DOCUMENTATION

NLSY main file documentation is available for either all survey years or the most recent survey year. Select items (survey instruments, flowcharts, and interviewer reference manuals) can be purchased by year.

NLSY Survey Instruments	[ ]	All Years(Y01)	$	90.00
	[ ]	Single Year (C01)	$	10.00
		Specify Year(s):		
NLSY KWIC Index	[ ]	All Years(Y02)	$	25.00
	[ ]	Current Year(C02)	$	5.00
NLSY Numeric Index	[ ]	All Years(Y03)	$	15.00
	[ ]	Current Year(C03)	$	5.00
NLSY Codebook	[ ]	All Years(Y04)	$	65.00
	[ ]	Current Year(C04)	$	15.00
NLSY Attachments & Appendices	[ ]	All Years(Y05)	$	6.00
	[ ]	Current Year(C05)	$	3.00
NLSY Technical Sampling Report & Addendum	[ ]	All Years(Y06)	$	5.00
	[ ]	Current Year(C06)	$	1.00
NLSY Household Screener & IRM	[ ]	1978 (Y08)	$	7.00
NLSY Complete Documentation Set	[ ]	All Years(Y09)	$	230.00
	[ ]	Current Year(C09)	$	45.00
NLSY Flowcharts	[ ]	All Years(Y10)	$	27.00
	[ ]	Single Year (C10)	$	3.00
		Specify Year(s):		
NLSY Interviewer Reference Manuals	[ ]	All Years(Y11)	$	90.00
	[ ]	Single Year (C11)	$	10.00
		Specify Year(s):		
Other:	[ ]	(D999)	$	
	[ ]	(D999)	$	
	[ ]	(D999)	$	

NLSY SPECIAL FILE DOCUMENTATION

[ ] NLSY Workhistory Documentation - All Years	(S01)	$	15
[ ] NLSY Geocode 1979-82 Documentation	(S02)	$	5

[ ] NLSY Geocode 1983-87 Documentation	(S03)	$	6
[ ] NLSY 1986 Child Raw Item File Documentation	(S04)	$	15
[ ] NLSY 1979-86 Merged Child-Mother Documentation	(S05)	$	25
[ ] NLSY Child Assessment Packet - 1986	(S06)	$	15
[ ] NLSY Supplemental Fertility Documentation	(S07)	$	5
[ ] High School & Transcript Survey Codebook	(S08)	$	6
[ ] Profile of American Youth - Attachment 106	(S09)	$	3
[ ] Fertility Related Data in the 1982 NLSY	(S10)	$	7
[ ] Evaluation of Fertility Data - 1983 NLSY	(S11)	$	7
[ ] Selected Tables: NLSY	(S12)	$	2
[ ] Child Assessment Measures in the 1986 NLSY	(S13)	$	2
[ ] Inconsistencies in Marital History Memo	(S14)	$	1
[ ] Inconsistencies in Age at Birth Memo	(S15)	$	1
[ ] Other:	(D999)	$	
[ ]	(D999)	$	

ORIGINAL COHORT DOCUMENTATION

Original cohort documentation is available by cohort and includes all survey years for each cohort ordered.

Specify cohort: Men(M) Women(W) Young Men(B) Young Women(G)

[ ] Set of Questionnaires	(01)	$	12.00
[ ] KWIC & Numeric Indices	(02)	$	20.00
[ ] Codebook	(04)	$	50.00
[ ] Attachments	(05)	$	8.00
[ ] Codebook Supplement	(07)	$	8.00
[ ] Household Record Cards & Flow Charts	(08)	$	2.00
[ ] Complete Documentation Set	(09)	$	100.00
[ ] Set of Interviewer Reference Manuals	(11)	$	25.00
[ ] Other: _____	(D999)	$	
[ ] _____	(D999)	$	

FOR CHRR USE ONLY

Date Received	Total Order	Total Paid
Check #	Invoice #	Date Mailed

Return order form with check made payable to the Center for Human Resource Research to: NLS Public User's Office, Center for Human Resource Research, The Ohio State University, 650 Ackerman Road, Suite A, Columbus, Ohio 43202.

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NLS PUBLIC USER SERVICES

The CHRR offers NLS users a number of services in connection with the release, dissemination, and support of the NLS data. The Center serves as a clearinghouse for information related to the NLS as well as a source of technical and research assistance for individuals interested in or actively using the data.

User Problem Identification

As research proceeds with the NLSY Child data, questions may arise concerning suspected errors in the tapes or the documentation. Users who identify what they believe to be errors in the content of the data files are urged to contact the NLS Public Users Office at the Center. The user should identify the problem as precisely and in as much detail as possible and provide the following types of specific information:

(1) a brief statement of the problem;

(2) the variable(s) in question identified by reference number(s);

(3) the universe of respondents;

(4) a copy of the computer output which gave rise to the question; and

(5) the name and telephone number of the person to be contacted in the event further information is required.

CHRR Problem Resolution and Error Notification

The Center will investigate all problems brought to its attention and make every effort to notify the public user in a timely manner of the problem's resolution. All known errors with corrections are announced in the quarterly NLS newsletter and are made available to BITNET users via NLSERVE, discussed below. In addition, hard copy notification of errors which have not been corrected on the data files are provided within the documentation package. When substantive errors are discovered, the Center will notify by mail all persons who previously purchased the data file in question. If the error is of major consequence, an update tape with the corrected variable(s) is provided to Center purchasers. Researchers who acquire NLS data from other sources are encouraged to notify the NLS Public Users Office that they wish to receive such error update notifications. Such users will not, of course, be eligible to receive update tapes free of charge. In addition, users detecting errors on tapes

they received from other sources should clarify, if possible, whether the error also appeared on the version of the tape originally obtained from CHRR.

BITNET Services

BITNET users can directly access up-to-date data file information and certain NLS publications via NLSERVE, a CHRR file server. There is no charge for these electronic documents and delivery is direct to the user on BITNET. The following items are currently available via NLSERVE:

(1) the NLS newsletter "NLSUPDATE",

(2) selected NLS research papers,

(3) update notices on data file and documentation errors,

(4) data file and publication order information.

BITNET users should use the following command syntax and the NLSERVE commands listed below.

For VAX/VMS users: SEND NLSERVE@OHSTHR nlserve_command

e.g., SEND NLSERVE@OHSTHR HELP

For IBM/VM users: TELL NLSERVE AT OHSTHR nlserve_command

e.g., TELL NLSERVE AT OHSTHR HELP

For IBM/MVS TSO users: Command syntax is site dependant, consult your local user services representative.

Valid NLSERVE commands are:

HELP - For help information, broadcast directly to the user's terminal device.

INFO - For general introduction to the Center and NLSERVE.

DIR - For a directory listing of available files.

SEND filename.filetype - For requesting a specific file.

To subscribe to the NLS newsletter, "NLSUPDATE," and the data update service, users should request the file - SUBSCRIBE.INFO. When the newsletter is issued (quarterly), or when a data update is available (immediately), distribution to subscribers is automatic via BITNET.

CHRR Staff Assistance

Staff members of the Center are available to assist public users. They can be reached either through their BITNET address listed below or through the Center's general mailing address and phone number. Users are encouraged to fully utilize their own resources, both print NLS materials and their local computer support staff, prior to contacting the Center for assistance.

Inquiries about any of the NLS data, documentation, and orders for tapes, documentation, and publications should be directed first to Gale James at the NLS Public Users Office, (614) 263-1682, USERSVC@OHSTHR.

Specific questions of a substantive nature on the content and/or structure of the data files can be addressed to the attention of the following individuals:

Four Original NLS Cohorts:	Patricia Rhoton	[RHOTON@OHSTHR]
NLSY:	Laura Branden	[BRANDEN@OHSTHR]
NLSY Children:	Paula Baker	[BAKER@OHSTHR]
NLSY Fertility:	Jean Haurin	[HAURIN@OHSTHR]

Questions of a technical nature should be addressed to the following members of the computer group:

Director, Data Processing:	Carol Sheets	[SHEETS@OHSTHR]
Tape format & specifications:	David Ball	[BALL@OHSTHR]
Use of CD ROM:	Rufus Milsted	[SRM@OHSTHR]
BITNET, NLSERVE:	Peter Tomasek	[TOMASEK@OHSTHR]

Questions on the NLS related to grant applications or statistical issues should be forwarded to Randall Olsen, Principal Investigator of the NLS [OLSEN@OHSTHR].

Substantive questions on the NLSY children's data, the NLSY childcare data, the maternal-child health data, and the supplemental fertility data can be addressed to Paula Baker or Frank Mott.

The Center's mailing address and phone number are:

The Center for Human Research Research
The Ohio State University
650 Ackerman Road Suite A
Columbus, Ohio 43202-1501 (614) 263-1682

Text Tables

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Table 1. NLSY Child Assessment Advisory Panel

NAME	TITLE AND AFFILIATION	AREA OF EXPERTISE
Ann L. Brown	Professor, Department of Psychology, University of Illinois	Child assessment, especially school achievement
Joseph Campione	Professor, Department of Psychology, University of Illinois	Child assessment and school achievement
William E. Cross, Jr.	Professor, Department of Psychology, Cornell University	Child assessment and school achievement
Rochel Gelman	Professor, Department of Psychology, University of Pennsylvania	Child assessment and school achievement
Willard H. Hartup	Professor, Institute of Child Development, University of Minnesota	Child development, achievement, personality and social development
Lois Hoffman	Associate Professor, Department of Psychology, University of Michigan	Child development, cultural bias in testing women, environmental psychology
Jerome Kagan	Professor, Department of Psychology and Social Relations, Harvard University	Child development (especially cognition), personality and social development, and cultural bias
Luis M. Laosa	Senior Research Scientist, Educational Testing Service, Princeton, New Jersey	Cultural bias in testing of minorities, test assessment
Marian Radke-Yarrow	Chief, Laboratory of Developmental Psychology, The National Institute of Mental Health	Assessment of children, especially social-emotional development

Table 1. NLSY Child Assessment Advisory Panel (continued)

NAME	TITLE AND AFFILIATION	AREA OF EXPERTISE
Henry Ricciuti	Professor, Department of Human Development and Family Studies, Cornell University	Child development and family relations
Barbara Starfield, M.D.	Professor, Department of Health Care Organizations, The Johns Hopkins University	Pediatrics, health policy, and physical development
Michael Yogman, M.D.	Director, Infant Health and Development Program, Children's Hospital, Boston, Massachusetts	Pediatrics and physical development of children
Nicholas Zill	President, Child Trends, Inc., Washington, D.C.	Child Development, physical development, and large-scale survey research

Table 2. Interviews Completed by NLSY Civilian Female Respondents and Children in 1979 and 1986, by Race/Ethnicity

	1979		1986				1986				
	FEMALES	MOTHERS	FEMALES		MOTHERS		CHILDREN				
							OF MOTHERS INTVD 1986		ASSESSED IN 1986		TOTAL
RACE SIZE	SAMPLE SIZE	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	PERCENT	SAMPLE SIZE	PERCENT	SAMPLE SIZE	PERCENT	SAMPLE SIZE
White	2279	928	2127	93.3	895	96.4	1471	97.2	1383	91.4	1514
Poor White	1099	631	1001	91.1	597	94.6	1114	95.6	1039	89.2	1165
Hispanic	978	567	877	89.7	523	92.2	975	92.9	932	88.8	1049
Black	1472	927	1399	95.0	895	96.5	1676	96.4	1599	92.0	1738
Total	5828	3053	5404	92.7	2910	95.3	5236	95.8	4953	90.6	5466

Table 3. Child Assessment Completion Rates by Race/Ethnicity: Children Assessed in 1986

		RACE/ETHNICITY											
		TOTAL			HISPANIC			BLACK			WHITE		
		TOTAL	VALID SCORE		TOTAL	VALID SCORE		TOTAL	VALID SCORE		TOTAL	VALID SCORE	
ASSESSMENT	CHILD AGE	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT
The HOME	3 years	1780	1704	95.7	318	307	96.5	496	472	95.2	966	925	95.8
	3-5 years	1657	1594	96.2	349	329	94.3	508	490	96.5	800	775	96.9
	6 years & older	1534	1488	97.0	270	263	97.4	600	578	96.3	664	647	97.4
Temperament	< 1 year	574	574	100.0	96	96	100.0	157	157	100.0	321	321	100.0
	1 year	622	622	100.0	111	111	100.0	166	166	100.0	345	345	100.0
	2-6 years	2686	2680	99.8	543	542	99.8	842	841	99.9	1301	1297	99.7
Motor & Social Development	0-3 months	162	150	92.6	28	26	92.9	41	38	92.7	93	86	92.5
	4-6 months	148	143	96.6	27	27	100.0	42	40	95.2	79	76	96.2
	7-9 months	169	160	94.7	29	27	93.1	53	50	94.3	87	83	95.4
	10-12 months	150	142	94.7	23	20	87.0	36	33	91.7	91	89	97.8
	13-15 months	154	144	93.5	26	25	96.2	42	37	88.1	86	82	95.3
	16-18 months	161	150	93.2	28	26	92.9	42	38	90.5	91	86	94.5
	19-21 months	165	147	89.1	31	27	87.1	45	41	91.1	89	79	88.8
	22-47 months	1265	1194	94.4	247	223	90.3	379	353	93.1	639	618	96.7
Behavior Problems	4 years & older	2597	2476	95.3	498	468	94.0	924	886	95.9	1175	1122	95.5
Body Parts	12-35 months	1206	1004	83.3	222	178	80.2	339	283	83.5	645	543	84.2
Memory for Location	8-47 months	2010	1642	81.7	377	287	76.1	582	464	79.7	1051	891	84.8

Table 3. Child Assessment Completion Rates by Race/Ethnicity: Children Assessed in 1986 (continued)

		RACE/ETHNICITY											
		TOTAL			HISPANIC			BLACK			WHITE		
		TOTAL	VALID SCORE		TOTAL	VALID SCORE		TOTAL	VALID SCORE		TOTAL	VALID SCORE	
ASSESSMENT	CHILD AGE	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT	SAMPLE SIZE	SAMPLE SIZE	PERCENT
Verbal Memory Part A & B	3-6 years	2102	1986	94.5	432	381	88.2	669	647	96.7	1001	958	95.7
Verbal Memory Part C	3-6 years	2102	1940	92.3	432	368	85.2	669	635	94.9	1001	937	93.6
SPPC-Global	8 years & older	763	732	95.9	119	116	97.5	327	313	95.7	317	303	95.6
SPPC-Scholastic	8 years & older	763	732	95.9	119	116	97.5	327	313	95.7	317	303	95.6
Digit Span	7 years & older	1089	984	90.4	187	166	88.8	439	394	89.7	463	424	91.6
PIAT Math	PPVT age 5 yrs +	2035	1885	92.6	365	323	88.5	765	718	93.9	905	844	93.3
PIAT Reading Recognition	PPVT age 5 yrs +	2035	1876	92.2	365	319	87.4	765	719	94.0	905	838	92.6
PIAT Reading Comprehension	PPVT age 5 yrs +	2035	1725	84.8	365	289	79.2	765	656	85.8	905	780	86.2
PPVT-R	PPVT age 3 yrs +	3221	2798	86.9	624	506	81.1	1118	961	86.0	1479	1331	90.0

Note: The 4971 children in this universe, of the 5255 born to mothers interviewed in 1986, are those known to be available (primarily in their mother's home) at the time of assessment.

Table 4. Sample Distribution of Age of Child in 1986 by Age of Mother at Birth of Child: Children Born to NLSY Mothers Interviewed in 1986

AGE OF CHILD AT 1986 INTERVIEW DATE OF MOTHER	AGE OF MOTHER AT BIRTH OF CHILD																		
	12 OR UNDER	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
Missing data*			3	1	11	5	5	16	7	8	14	3	9	1	3	1	1	1	89
0									13	74	87	77	71	74	81	64	46	6	593
1								17	75	93	73	89	80	76	79	46	6		634
2							13	75	77	74	76	80	82	75	54				606
3						10	67	78	80	89	95	63	77	47	3				609
4					5	48	59	83	90	88	91	80	56	7					607
5				4	25	57	70	81	84	68	55	55	1						500
6			1	11	35	46	67	68	87	82	63	2							462
7			4	12	28	46	65	65	58	63	3								344
8			4	15	37	56	53	74	52	1									292
9			3	12	36	48	58	49	1										207
10		1	1	20	44	55	42	3											166
11		1	4	13	31	35	3												87
12 & over	1	3	8	27	19	1													59
Total	1	5	28	115	271	407	502	609	624	640	557	449	376	280	220	111	53	7	5255

Note: * Includes children deceased or not yet born at date of interview.

Table 5. Sample Distribution of Year of Birth of Child by Age of Mother At Birth of Child: Children Born to NLSY Mothers Interviewed in 1986

YEAR OF BIRTH OF CHILD	AGE OF MOTHER AT BIRTH OF CHILD																		
	12 OR UNDER	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
70		1																	1
71	1	1	1																3
72			2	8															10
73		1	4	16	12														33
74			4	14	31	25													74
75		2	3	17	37	58	26												143
76			3	13	47	46	66	36											211
77			4	15	36	51	54	76	38										274
78			4	15	33	55	63	65	61	43									339
79			3	11	32	42	69	70	71	86	43								427
80				6	32	61	69	92	88	72	66	37							523
81					11	49	65	90	104	82	86	78	34						599
82						20	67	72	70	97	97	67	84	43					617
83							23	76	86	81	84	75	86	75	37				623
84								32	76	84	67	95	79	68	79	36			616
85									30	84	98	84	79	78	82	58	42		635
86										11	16	13	14	16	22	17	11	7	127
Total	1	5	28	115	271	407	502	609	624	640	557	449	376	280	220	111	53	7	5255

Table 6. Sample Distribution of Year of Birth of Child by Age of Mother At Birth of Child: Children Assessed in 1986

YEAR OF BIRTH OF CHILD	AGE OF MOTHER AT BIRTH OF CHILD																		
	12 OR UNDER	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
70		1																	1
71	1	1	1																3
72			2	8															10
73		1	5	15	12														33
74			3	12	28	21													64
75		2	3	15	34	52	23												129
76			2	10	45	43	64	32											196
77			4	13	30	49	49	72	36										253
78			3	14	31	52	58	60	55	39									312
79			3	11	28	39	68	65	69	84	40								407
80				6	27	56	65	83	87	67	62	33							486
81					11	43	62	83	99	80	80	73	31						562
82						20	63	68	68	95	91	67	81	42					595
83							23	75	81	77	80	72	81	71	35				595
84								29	73	81	67	93	74	63	77	35			592
85									29	83	92	83	76	76	78	55	38		610
86										11	16	13	13	14	22	16	11	7	123
Total	1	5	26	104	246	375	475	567	597	617	528	434	356	266	212	106	49	7	4971

Table 7. Distribution of NLSY Women by Age at First Birth, Parent Status, Race/Ethnicity, and Highest Grade Completed by 1986

HIGHEST GRADE OF SCHOOL COMPLETED	AGE AT FIRST BIRTH					PARENT STATUS		
	UNDER 15	15-16	17-19	20-23	24 & OVER	TOTAL MOTHERS	NON-MOTHERS	TOTAL WOMEN
Total	31	341	1071	1046	376	2865	2467	5332
Less than 12	24	231	504	210	34	1003	237	1240
12 years	7	84	460	559	146	1256	819	2075
13 years and above	0	26	107	277	196	606	1411	2017
Percent who are H.S. dropouts	77.4	67.7	47.1	20.0	9.0	35.0	9.6	23.3
White	9	124	504	570	262	1469	1616	3085
Less than 12	8	99	264	106	17	494	133	627
12 years	1	23	207	346	111	688	540	1228
13 years and above	0	2	33	118	134	287	943	1230
Percent who are H.S. dropouts	--	79.8	52.4	18.6	6.5	33.6	8.2	20.3
Black	20	159	360	289	56	884	504	1388
Less than 12	14	80	126	40	4	264	54	318
12 years	6	57	176	132	18	389	159	548
13 years and above	0	22	58	117	34	231	291	522
Percent who are H.S. dropouts	70.0	50.3	35.0	13.8	7.1	29.9	10.7	22.9
Hispanic	2	58	207	187	58	512	348	860
Less than 12	2	52	114	64	13	245	51	296
12 years	0	4	77	81	17	179	120	299
13 years and above	0	2	16	42	28	88	177	265
Percent who are H.S. dropouts	--	89.7	55.1	34.2	22.4	47.9	14.7	34.4

Note: Sample includes all NLSY women interviewed in 1986 for whom information was available.

Table 8. Distribution of Children by Highest Grade of School Completed by Mother, by Age of Mother at Birth of Each Child, 1986

HIGHEST GRADE COMPLETED BY MOTHER	AGE OF MOTHER AT BIRTH OF CHILD					TOTAL
	11–14	15–16	17–19	20–23	24 & OVER	
Total	32	379	1477	2216	1015	5119
0–11 years	25	263	811	813	232	2144
12 years	7	89	545	1023	418	2082
13 or more years	0	27	121	380	365	893
Percent of children born to H.S. dropouts	78.1	69.3	54.9	36.7	22.9	41.9

Note: Sample includes all children born to women interviewed in 1986 for whom information was available.

Table 9. Distribution of Children by Highest Grade of School Completed by Mother, by Age of Each Child in 1986

HIGHEST GRADE COMPLETED BY MOTHER	AGE OF CHILD IN 1986													TOTAL
	0	1	2	3	4	5	6	7	8	9	10	11	12 & OVER	
Total	588	623	602	601	604	501	459	336	288	206	163	87	60	5118
0-11 years	160	201	195	228	256	230	208	178	164	122	103	53	45	2143
12 years	259	267	280	261	251	209	195	124	91	64	48	23	10	2082
13 or more years	169	155	127	112	97	62	56	34	33	20	12	11	5	893
Percent of children born to H.S. dropouts	27.2	32.3	32.4	37.9	42.4	45.9	45.3	53.0	56.9	59.2	63.2	60.9	75.0	41.9

Note: Sample includes all children born to women interviewed in 1986 for whom information was available. Age of child was computed based on 1986 interview date of mother.

Table 10. Age of Children in 1986 by Mother's AFQT Score (Standard Deviation Units)

MOTHER'S AFQT SCORE	AGE OF CHILD IN 1986													TOTAL
	0	1	2	3	4	5	6	7	8	9	10	11	12 & OVER	
Total	579	606	583	598	576	483	449	333	278	203	164	86	59	4997
Above mean	200	195	181	158	156	115	101	80	64	44	32	9	12	1347
Within one S.D. below mean	182	177	196	197	186	157	136	96	74	60	36	24	15	1536
1-2 S.D. below mean	152	163	141	178	168	152	146	109	95	65	64	36	19	1488
2 or more S.D. below mean	45	71	65	65	66	59	66	48	45	34	32	17	13	626
Percent of children with mothers below mean	65.5	67.8	69.0	73.6	72.9	76.2	77.5	76.0	77.0	78.3	80.5	89.5	79.7	73.0

Note: Sample includes all children born to women interviewed in 1986 for whom information was available.

Table 11. Characteristics of Children by Age of Child in 1986 (Unweighted Estimates)

AGE OF CHILD IN 1986	RACE/ETHNICITY OF MOTHER			PERCENT WITH MOTHERS WHO HAVE LESS THAN 12 YEARS SCHOOLING	MEAN AGE OF MOTHER AT BIRTH	PERCENT WITH MOTHERS WHO HAVE LESS THAN 12 YEARS SCHOOLING		
	PERCENT HISPANIC	PERCENT BLACK	PERCENT WHITE			HISPANIC	BLACK	WHITE
Under 1	17.2	27.0	55.8	27.0	24.2	36.3	25.6	24.8
1	18.3	26.5	55.2	32.3	23.2	48.3	32.7	26.9
2	18.3	29.2	52.5	32.2	22.3	51.4	26.0	28.9
3	20.7	30.4	48.9	37.0	21.3	46.0	32.4	35.9
4	22.6	29.0	48.4	41.4	20.7	48.9	41.5	37.8
5	19.4	31.8	48.8	44.2	19.7	61.9	32.7	44.7
6	18.8	35.5	45.7	42.9	19.3	56.3	36.6	42.2
7	20.4	33.7	45.9	51.2	18.7	62.9	46.6	49.4
8	17.5	37.0	45.6	54.1	18.0	76.5	50.0	48.9
9	13.0	41.1	46.0	57.5	17.4	74.1	48.2	61.1
10 and over	14.7	46.8	38.5	62.8	16.3	84.8	51.4	68.3
Total	18.8	31.8	49.4	40.7		54.2	37.2	37.9

Note: Sample includes all children born to women interviewed in 1986 for whom information was available.

Table 12. Children of Other Interviewed NLSY Female Relatives of Mother as of 1986

GENDER OF CHILD	RELATIONSHIP OF OTHER INTERVIEWED NLSY R TO MOTHER								
	FEMALE RELATIVES				FEMALE RELATIVES WHO ARE MOTHERS AS OF 1986				
	SISTER	AUNT	COUSIN	TOTAL	SISTER	AUNT	COUSIN	TOTAL	TOTAL
Male	639	6	29	674	445	6	23	474	1148
Female	691	5	19	715	440	4	17	461	1176
Missing data	5		1	6	4		1	5	11
Total	1335	11	49	1395	889	10	41	940	2335

Note: Sample includes children with at least one other interviewed female relative of mother in the main NLSY sample.

Table 13. Distribution of NLSY Women by Number and Age of Children and Race/Ethnicity, 1986

TYPE OF HOUSEHOLD (FEMALE)	AGE OF CHILDREN	NUMBER OF HOUSEHOLDS			
		TOTAL	BLACK	WHITE	HISPANIC
Females with no children		2500	508	1639	353
Mothers with 1 child	Total	1331	396	702	233
	< 3 years old	656	154	396	106
	3-5 years old	432	148	196	88
	6-8 years old	176	61	82	33
	9+ years	67	33	28	6
Mothers with 2 children	Total	1059	307	569	183
	Both < 3 years	127	29	80	18
	Both 3-5	84	24	44	16
	Both 6-8	38	6	25	7
	Both 9+ years	22	11	9	2
	Youngest < 3, oldest 3-5	344	70	206	68
	Youngest < 3, oldest 6-8	122	49	53	20
	Youngest < 3, oldest 9+	27	14	11	2
	Youngest 3-5, oldest 6-8	183	58	91	34
	Youngest 3-5, oldest 9+	54	23	24	7
	Youngest 6-8, oldest 9+	58	23	26	9
Mothers with 3 or more children	Total	528	193	225	109
	Youngest < 3, oldest < 3	2	1	0	1
	Youngest 3-5, oldest 3-5	3	0	1	2
	Youngest 6-8, oldest 6-8	0	0	0	0
	Youngest 9+, oldest 9+	2	2	0	0
	Youngest < 3, oldest 3-5	103	28	50	25
	Youngest < 3, oldest 6-8	147	59	59	29
	Youngest < 3, oldest 9+	74	31	27	16
	Youngest 3-5, oldest 6-8	73	26	30	17
	Youngest 3-5, oldest 9+	84	31	38	15
	Youngest 6-8, oldest 9+	39	15	20	4

Table 14. Child Care Questions in the NLSY Youth, 1984 through 1986

YEAR	MAIN YOUTH SAMPLE	NATURE OF QUESTIONS	TIME REFERENCE	REFERENCE CHILDREN
1984	(1) All respondents in school, in training, or employed with child in household	(1) Location, type, and hours of primary & secondary care; nature of payments; use of grandmother	(1) Last 4 weeks	(1) Youngest child in household
	(2) Not employed respondents with employed spouse	(2) Location and type of primary care	(2) Last 4 weeks	(2) Youngest child in household
	(3) Women with a child in the household	(3) Hypothetical care	---	---
1985	(1) All respondents in school, in training or employed with child in household	(1) Location, type, and hours of primary & secondary care; detail on payments; retrospective on current arrangement; detail on primary group care; hypothetical care	(1) Last 4 weeks	(1) Child in household who was youngest in household in 1984
	(2) Same as (1)	(2) Same as (1)	(2) Last 4 weeks	(2) Youngest child in household - no care data collected in 1984
	(3) Same as (1)	(3) Location and type of primary & seconary care	(3) Last 4 weeks	(3) Youngest child in household
	(4) Respondents **not** in school, in training, or employed with employed spouse	(4) Location and type of primary care	(4) Last 4 weeks	(4) Youngest child in household
1986	(1) All women with a child in the household	(1) Location, type, and hours of primary & secondary care; detail on primary group care; payment for all care	(1) Last 4 weeks	(1) All children in household
	(2) All mothers	(2) Location and type of up to 5 arrangements at each age	(2) First 3 years of life	(2) All biological children of mother

Table 15. Linkage Between HOME Reference Numbers and Mother/Child Supplement Questionnaire Items

REFERENCE NUMBER	CHILD AGE		
	UNDER 3	3-5	6 AND OVER
C2651.01	*MS0127	*MS0143	*MS0212
C2651.02	*MS0129	*MS0144	*MS0213
C2651.03	*MS0130	*MS0145	MS0214
C2651.04	*MS0131	*MS0146	MS0215
C2651.05	*MS0132	*MS0147	MS0216
C2651.06	*MS0134	*MS0148	MS0217
C2651.07	*MS0136	*MS0149	MS0218
C2651.08	MS0137	*MS0150	*MS0219
C2651.09	MS0138	MS0151	*MS0220
C2651.10	MS0139	MS0152	*MS0221
C2651.11	MS0140	MS0154	*MS0222
C2651.12	MS0141	MS0156	*MS0223
C2651.13		MS0158	*MS0224
C2651.14		MS0160	*MS0225
C2651.15		MS0162	MS0226
C2651.16		MS0164	MS0227
C2651.17		MS0166	MS0228
C2651.18		*MS0168	MS0229
C2651.19		*MS0169	MS0230
C2651.20		MS0170	*MS0231
C2651.21		MS0171	MS0232
C2651.22		MS0172	MS0234
C2651.23		MS0173	MS0236
C2651.24			MS0238
C2651.25			MS0240
C2651.26			MS0242
C2651.27			MS0244
C2651.28			MS0246
C2651.29			MS0247
C2651.30	CS3154	CS3166	CS3212
C2651.31	CS3155	CS3167	CS3213
C2651.32	CS3156	CS3168	CS3214
C2651.33	CS3157	CS3169	CS3215
C2651.34	CS3158	CS3170	CS3216
C2651.35	*CS3159	CS3171	*CS3217
C2651.36	CS3160	CS3172	*CS3218
C2651.37	*CS3161	*CS3173	*CS3219
C2651.38		*CS3174	*CS3220
C2651.39		*CS3175	
C2651.40		*CS3176	

Note: * = items that comprise Cognitive Stimulation scale; nonstarred items comprise Emotional Support scale.
"MS" prefix denotes deck and column in Mother Supplement;
"CS" prefix denotes deck and column in Child Supplement.

Table 16. Components of HOME Subscores by Age of Child

	COGNITIVE STIMULATION SCALE														
	TOTAL SCORE (C2642.)			LEARNING ENVIR. SUBSCORE (C2643.)			PHYSICAL ENVIR. SUBSCORE (C2644.)			READING ENVIR. SUBSCORE (C2645.)			ENVIRONMENTAL VARIETY SUBSCORE (C2646.)		
REFERENCE NUMBER	UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER
C2651.01	X	X	X								X	X	X		
C2651.02	X	X	X							X	X	X			
C2651.03	X	X								X	X				
C2651.04	X	X											X	X	
C2651.05	X	X		X	X										
C2651.06	X	X		X	X										
C2651.07	X	X		X	X										
C2651.08		X	X		X	X									
C2651.09			X									X			
C2651.10			X									X			
C2651.11			X			X									
C2651.12			X			X									
C2651.13			X												X
C2651.14			X												X
C2651.15															
C2651.16															
C2651.17															
C2651.18		X												X	
C2651.19		X												X	
C2651.20			X												X
C2651.21															
C2651.22															
C2651.23															
C2651.24															
C2651.25															
C2651.26															
C2651.27															
C2651.28															
C2651.29															
C2651.30															
C2651.31															
C2651.32															
C2651.33															
C2651.34															
C2651.35	X		R	X					R						
C2651.36			X						X						
C2651.37	X	X	X				X	X	X						
C2651.38		R	X					R	X						
C2651.39		X						X							
C2651.40		X						X							

Note: "R" means item was recoded in reverse (i.e., "1" was recoded "0"; "0" was recoded "1").

Table 16. Components of HOME Subscores by Age of Child (continued)

	EMOTIONAL SUPPORT SCALE																	
	TOTAL SCORE (C2647.)			PARENTAL INVOLVEMENT SUBSCORE (C2648.)			MODELING OF MATURITY SUBSCORE (C2649.)			MATERNAL RESPONSIVITY SUBSCORE (C2650.)			DISCIPLINE SUBSCORE (C2651.)		
REFERENCE NUMBER	UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER	3-5	6 & OVER		UNDER 3	3-5	6 & OVER	UNDER 3	3-5	6 & OVER
C2651.01															
C2651.02															
C2651.03															
C2651.04															
C2651.05															
C2651.06															
C2651.07															
C2651.08															
C2651.09	X	X		X										X	
C2651.10	X	X					X			X					
C2651.11															
C2651.12	X												X		
C2651.13															
C2651.14															
C2651.15			X			X									
C2651.16															
C2651.17			X			X									
C2651.18			X			X									
C2651.19			X			X									
C2651.20															
C2651.21		X			X										
C2651.22															
C2651.23		X												X	
C2651.24															
C2651.25															
C2651.26															
C2651.27															
C2651.28															
C2651.29			X												X
C2651.30	X	X	X							X	X	X			
C2651.31	X	X	X							X	X	X			
C2651.32	X	X	X							X	X	X			
C2651.33	R	X	X								X	X	R		
C2651.34	R	X	X				X	X					R		
C2651.35		R												R	
C2651.36	X	R		X										R	
C2651.37															
C2651.38															
C2651.39															
C2651.40															
Hit 1		X												X	
Hit 2			X												X
Work 17			X					X							
Work 18			X					X							

Note: See attached pages from Mother Supplement Section 1: THE HOME for definitions of Hit 1, Hit 2, Work 17, and Work 18.

Table 17. Reliability of the HOME, BPI and SPPC Assessment Scores

ASSESSMENT	SAMPLE SIZE	NO. OF ITEMS	CRONBACH'S ALPHA
Home Observation for Measurement of the Environment (HOME)			
Age 0-2 years			
Total HOME	1505	18	.56
Cognitive	1571	9	.53
Emotional Support	1616	9	.38
Age 3-5 years			
Total HOME	1403	26	.70
Cognitive	1486	14	.69
Emotional Support	1489	12	.49
Age 6 + years			
Total HOME	1293	26	.70
Cognitive	1319	14	.63
Emotional Support	1425	12	.62
Behavioral Problems Index (BPI)			
Total - never in school	770	26	.86
Total - ever in school	1726	28	.87
Antisocial - never in school	785	4	.54
Antisocial - ever in school	1751	6	.66
Anxious	2548	4	.58
Headstrong	2552	5	.69
Hyperactive	2552	5	.66
Dependent	2572	4	.60
Peer Conflict	2555	3	.56
Self-Perception Profile of Children (SPPC)			
Global Self-Worth	727	6	.66
Scholastic Competence	723	6	.64

Table 18. Distribution of Valid and Invalid Assessment Responses by Race/Ethnicity, Maternal Education and Maternal Age at Birth

	PERCENT HISPANIC	PERCENT BLACK	PERCENT WHITE	PERCENT WITH MOTHER WHO HAS LESS THAN 12 YEARS SCHOOL	PERCENT WHO WERE BORN BEFORE MOTHER REACHED AGE 20	PERCENT VALID WHITE	PERCENT VALID BLACK	PERCENT VALID HISPANIC
Memory for Location						84.8	79.7	76.1
Valid responses	17.5	28.3	54.3	25.4	13.5			
Invalid responses	24.5	32.0	43.5	31.3	8.2			
Body Parts						84.2	83.5	80.2
Valid responses	17.7	28.2	54.1	25.2	9.0			
Invalid responses	21.8	27.7	50.5	28.2	5.4			
Motor and Social Development						95.5	92.6	91.3
Valid responses	18.0	28.3	53.8	24.9	10.9			
Invalid responses	26.4	34.7	38.9	35.2	6.3			
The HOME						96.6	96.0	95.9
Valid responses	18.8	32.2	49.0	31.9	36.3			
Invalid responses	20.5	34.6	44.9	32.8	32.4			
Temperament (Inhibition Scale)						91.3	90.9	90.3
Valid responses	19.2	30.0	50.8	28.5	23.7			
Invalid responses	20.9	30.3	48.9	27.5	12.3			
PIAT Math						93.3	93.8	88.5
Valid responses	17.2	38.0	44.8	38.8	67.4			
Invalid responses	28.0	31.3	40.7	54.4	68.0			
PIAT Reading Recognition						92.6	94.0	87.4
Valid responses	17.0	38.2	44.7	39.1	67.8			
Invalid responses	28.9	28.9	42.1	50.0	63.5			
PIAT Reading Comprehension						82.6	82.6	72.8
Valid responses	15.5	39.4	45.2	38.5	74.4			
Invalid responses	24.5	35.2	40.3	43.5	66.5			
Behavior Problems Index						95.1	95.0	93.2
Valid responses	18.9	35.7	45.4	37.7	84.0			
Invalid responses	24.8	34.3	41.6	40.7	55.5			
PPVT-R						90.0	86.0	81.1
Valid responses	18.1	34.3	47.6	34.1	52.5			
Invalid responses	27.9	37.1	35.0	49.2	55.1			

Table 18. Distribution of Valid and Invalid Assessment Responses by Race/Ethnicity, Maternal Education and Maternal Age at Birth (continued)

	PERCENT HISPANIC	PERCENT BLACK	PERCENT WHITE	PERCENT WITH MOTHER WHO HAS LESS THAN 12 YEARS SCHOOL	PERCENT WHO WERE BORN BEFORE MOTHER REACHED AGE 20	PERCENT VALID		
						WHITE	BLACK	HISPANIC
Verbal Memory (Parts A & B)						95.7	96.7	88.2
Valid responses	19.2	32.6	48.2	30.9	37.3			
Invalid responses	44.0	19.0	37.1	46.6	32.8			
Verbal Memory (Part C)						93.6	94.9	85.2
Valid responses	19.0	32.7	48.3	30.3	37.3			
Invalid responses	39.5	21.0	39.5	49.4	34.0			
SPPC						95.6	95.7	97.5
Valid responses	15.8	42.8	41.4	46.3	---			
Invalid responses	9.7	45.2	45.2	60.0	---			
Digit Span						91.6	89.7	88.8
Valid responses	16.9	40.0	43.1	44.5	85.0			
Invalid responses	20.0	42.9	37.1	47.1	80.0			

Table 19. Correlations Between HOME Cognitive Stimulation and Emotional Support Scores and Other Child Assessments by Age

	HOME EMOT. SUPPORT	MSD SOCIABLTY.**		MEM. FOR LOCATN.	BODY PARTS	PPVT-R	VERBAL MEM. (A & B)	VERBAL MEM. (C)	BEHAV. PROB.	PIAT MATH	PIAT READ. RECOG.	PIAT READ. COMP.	DIGIT SPAN	SPPC SCHOLAS.	SPPC SELF-WORTH
Cognitive Stimulation															
0-7 Months	.37[a]	.32[a]	---	---	---	---	---	---	---	---	---	---	---	---	---
8-11 Months	.28[a]	.23[a]	.10	.13	---	---	---	---	---	---	---	---	---	---	---
1 Year	.34[a]	.33[a]	.23[a]	.17[a]	.24[a]	---	---	---	---	---	---	---	---	---	---
2 Years	.15[a]	.30[a]	.15[a]	.04	.32[a]	---	---	---	---	---	---	---	---	---	---
3 Years	.32[a]	.45[a]	.23[a]	.06	---	.37[a]	.19[a]	.17[a]	---	---	---	---	---	---	---
4 Years	.33[a]	---	.23[a]	---	---	.44[a]	.29[a]	.21[a]	-.18[a]	---	---	---	---	---	---
5 Years	.36[a]	---	.14[b]	---	---	.41[a]	.17[a]	.14[b]	-.11[c]	.27[a]	.40[a]	.32[a*]	---	---	---
6 Years	.31[a]	---	.09	---	---	.24[a]	.10[c]	.11[c]	-.19[a]	.22[a]	.16[a]	.17[a*]	---	---	---
7 Years	.30[a]	---	---	---	---	.37[a]	---	---	-.20[a]	.21[a]	.15[b]	.16[b]	.21[a]	---	---
8 Years	.35[a]	---	---	---	---	.31[a]	---	---	-.09	.17[b]	.15[b]	.21[a]	.19[b]	-.03	.07
9 Years and Over	.26[a]	---	---	---	---	.28[a]	---	---	-.13[b]	.19[a]	.28[a]	.24[a]	.15[a]	.17[a]	.11[b]
Emotional Support															
0-7 Months	---	.19[a]	---	---	---	---	---	---	---	---	---	---	---	---	---
8-11 Months	---	.19[b]	.25[a]	.15[c]	---	---	---	---	---	---	---	---	---	---	---
1 Year	---	.18[a]	.13[b]	.09	.20[a]	---	---	---	---	---	---	---	---	---	---
2 Years	---	.11[b]	.06	.12[b]	.10[c]	---	---	---	---	---	---	---	---	---	---
3 Years	---	.28[a]	.13[b]	.04	---	.37[a]	.12[b]	.14[a]	---	---	---	---	---	---	---
4 Years	---	---	.19[a]	---	---	.32[a]	.17[a]	.14[a]	-.13[b]	---	---	---	---	---	---
5 Years	---	---	.15[a]	---	---	.38[a]	.18[a]	.13[b]	-.23[a]	.26[a]	.33[a]	.27[a*]	---	---	---
6 Years	---	---	.17[a]	---	---	.22[a]	.07	.01	-.16[a]	.17[a]	.15[b]	.05[*]	---	---	---
7 Years	---	---	---	---	---	.27[a]	---	---	-.08	.29[a]	.22[a]	.20[a]	.20[a]	---	---
8 Years	---	---	---	---	---	.35[a]	---	---	-.11	.36[a]	.23[a]	.27[a]	.18[b]	.02	.20[b]
9 Years and Over	---	---	---	---	---	.20[a]	---	---	-.13[b]	.10	.12[b]	.15[a]	.08	.07	-.02

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$
* = PIAT Reading Comprehension raw score used for 5 and 6 year olds and standard score for ages 7 and over;
** = Temperament subscale

Table 20. Linkage Between Temperament Reference Numbers and Mother/Child Supplement Questionnaire Items

REFERENCE NUMBER	CHILD AGE			
	UNDER 1 YEAR	1 YEAR	2 THROUGH 6 YEARS	8 MONTHS - 6 YEARS
C2672.01	MS0249	MS0266	MS0312	
C2672.02	MS0250	MS0267	MS0313	
C2672.03	MS0251	MS0268	MS0314	
C2672.04	MS0252	MS0269	MS0315	
C2672.05	MS0253	MS0270	MS0316	
C2672.06	MS0254	MS0271	MS0317	
C2672.07	MS0255	MS0272	MS0318	
C2672.08	MS0256	MS0273	MS0319	
C2672.09	MS0257	MS0274	MS0320	
C2672.10	MS0258	MS0275	MS0321	
C2672.11	MS0259	MS0276	MS0322	
C2672.12	MS0260		MS0323	
C2672.13	MS0261		MS0324	
C2672.14	MS0262		MS0325	
C2672.15	MS0263		MS0326	
C2672.16	MS0264		MS0327	
C2672.17	MS0265		MS0328	
C2672.18			MS0329	
C2672.19			MS0330	
C2672.20			MS0331	
C2672.21				CS3131
C2672.22				CS3132
C2672.23				CS3133
C2672.24				CS3134
C2672.25				CS3135
C2672.29				CS3139
C2748.				CS0749

Note: "MS" prefix denotes deck and column in Mother Supplement;
"CS" prefix denotes deck and column in Child Supplement

Table 21. Temperament Subscales by Age of Child

SUBSCALE	AGE OF CHILD			
	0-7 MONTHS	8-11 MONTHS	12-23 MONTHS	24-83 MONTHS
Activity	X	X		
Predictability	X	X		
Fearfulness	X	X	X	
Positive Affect	X	X	X	
Irritability	X	X	X	
Compliance				X
Inhibition*	X*	X	X	X
Attachment				X
Sociability		X	X	X
Difficulty Composite	X	X	X	
Negative Hedonic Tone Composite	X	X	X	
Friendliness Composite		X	X	
Total No. of Scales	8	10	8	4

Note: * This subscale is composed of only 1 item (CS0749) for 0-7 month old children.

Table 22. Temperament - Composition of Subscales

AGE	SUBSCALE	COMPONENTS	REF NO.
8-11 Months	Inhibition		C2667.
		Int rating of shyness at start	C2748.
		Int rating of shyness at end	C2672.29
	Sociability		C2669.
		Int rating of attitude to testing	C2672.21
		Int rating of rapport	C2672.22
		Int rating of cooperation	C2672.24
	Friendliness Composite	Irritability (R), Sociability	C2672.
0-11 Months	Activity		C2661.
		Squirms & kicks during feeding	C2672.01
		Waves arms during feeding	C2672.02
		Moves during sleep	C2672.03
	Predictability		C2662.
		Gets sleepy at same time	C2672.04
		Gets hungry at same time	C2672.05
		Wakes in the same mood	C2672.06
	Fearfulness		C2663.
		Turns away & cries at stranger	C2672.07
		Turns away & cries at animal	C2672.08
		Cries when left alone	C2672.09
		Turns away & cries at Dr.	C2672.10
	Affect		2664.
		Smiles/laughs when playing with mother	C2672.11
		Smiles/laughs when playing alone	C2672.12
		Smiles/laughs when in the bath	C2672.13
	Irritability		C2665.
		Cries when hears sudden noise	C2672.14
		Trouble soothing or calming	C2672.15
		On average, gets fussy/irritable	C2672.16
		Compared with others, gets fussy/ irritable	C2672.17
	Difficulty Composite	Predictability (R), Fearfulness, Positive Affect(R), Irritability, Sociability (R); only for 8-11 months	C2670.
	Negative Hedonic Tone Composite	Fearfulness, Affect (R), Irritability	C2671.

Table 22. Temperament - Composition of Subscales (continued)

AGE	SUBSCALE	COMPONENTS	REF NO.
12-23 Months	Fearfulness		C2663.
		Turns away & cries at stranger	C2672.01
		Turns away & cries at animal	C2672.02
		Cries when left alone	C2672.03
		Turns away & cries at Dr.	C2672.04
	Affect		C2664.
		Smiles/laughs when playing with mother	C2672.05
		Smiles/laughs when playing alone	C2672.06
		Smiles/laughs when in the bath	C2672.07
	Irritability		C2665.
		Cries when hears sudden noise	C2672.08
		Trouble soothing or calming	C2672.09
		On average, gets fussy and irritable	C2672.10
		Compared w/ others, gets fussy/ irritable	C2672.11
	Difficulty Composite	Fearfulness, Positive Affect(R), Irritability, Sociability (R)	C2670.
	Negative Hedonic Tone Composite	Fearfulness, Affect (R), Irritability	C2671.
	Friendliness Composite	Irritability (R), Sociability	C2672.
2-6 Years	Compliance		C2666.
		Eats food given	C2672.01
		If does not eat, complies when told to eat	C2672.02
		Protests going to bed	C2672.03
		Protests, goes to bed when told again	C2672.04
		Turns off TV when told without protest	C2672.05
		Protests, turns off TV when told again	C2672.06
	Inhibition		C2667.
		Shy when first meets child	C2672.07
		Shy when first meets adult	C2672.08
		Cries easily when hurt	C2672.09
		Laughs & smiles easily	C2672.10
		Fights w/ hits other children	C2672.11
		Willingly shares with other children	C2672.12

Table 22. Temperament - Composition of Subscales (continued)

AGE	SUBSCALE	COMPONENTS	REF NO.
	Attachment		C2668.
		Trouble soothing or calming	C2672.13
		Stays close to mother during play	C2672.14
		Copies mother's behavior	C2672.15
		Cries when left alone	C2672.16
		Demanding & impatient when mother is busy	C2672.17
		Gets worried when mother is upset	C2672.18
		Wants help	C2672.19
	Sociability		C2669.
		Int rating of attitude to testing	C2672.21
		Int rating of rapport w/ interviewer	C2672.22
		Int rating of cooperation	C2672.24

Note: (R) denotes that items were reversed in scoring, i.e. "1 to 5" was recoded "5 to 1."

Table 23. Reliability of Temperament Assessment Scores

AGE	SUBSCALE	NO. OF ITEMS	SAMPLE SIZE	CRONBACH'S ALPHA
0-11 Months	Activity	3	564	.66
	Predictability	3	564	.65
	Fearfulness	4	541	.62
	Positive Affect	3	557	.76
	Irritability	4	558	.47
	Negative Hedonic Tone Composite	11	535	.58
0-7 Months	Inhibition	1	224	--
	Difficulty Composite	14	332	.62
8-11 Months	Inhibition	2	197	.77
	Sociability	3	199	.90
	Difficulty Composite	17	190	.71
	Friendliness Composite	7	195	.60
12-23 Months	Fearfulness	4	613	.66
	Positive Affect	3	612	.54
	Irritability	4	610	.54
	Inhibition	2	593	.75
	Sociability	3	597	.89
	Difficulty Composite	14	580	.72
	Negative Hedonic Tone Composite	11	604	.69
	Friendliness Composite	7	585	.68
24-83 Months	Compliance	6	2573	.60
	Inhibition	8	2518	.43
	Attachment	7	2614	.53
	Sociability	3	2600	.92

Table 24. Temperament Intersubscale Correlations: Children 0–11 Months

	ACTIVITY	PREDICT	FEARFUL	AFFECT	IRRITABLE	DIFFICULT
Predict	.0310	---	---	---	---	---
Fearful	.1992[a]	-.0542	---	---	---	---
Affect	.1904[a]	.2460[a]	.1695[a]	---	---	---
Irritable	.1833[a]	-.1918[a]	.3526[a]	-.1231[a]	---	---
Difficult	.1072[a]	-.4836[a]	.6344[a]	-.2467[a]	.5471[a]	---
Negative	.1066[a]	-.2482[a]	.6864[a]	-.4716[a]	.7341[a]	.7663[a]

Note: a = significant at $p < .01$

Table 25. Temperament Intersubscale Correlations: Children 8-11 Months

	INHIBIT	SOCIABLE
Sociable	-.5617[a]	---
Friendly	-.3779[a]	.7441[a]

Note: a = significant at $p < .01$

Table 26. Temperament Intersubscale Correlations: Children 12-23 Months

	FEARFUL	AFFECT	IRRITABLE	INHIBIT	SOCIABLE	DIFFICULT	NEGATIVE
Affect	-.0446	---	---	---	---	---	---
Irritable	.4534[a]	-.1383[a]	---	---	---	---	---
Inhibit	.2341[a]	-.1017[a]	.1351[a]	---	---	---	---
Sociable	-.1392[a]	.0601[b]	-.1660[a]	-.5378[a]	---	---	---
Difficult	.7772[a]	-.3323[a]	.7107[a]	.4277[a]	-.5734[a]	---	---
Negative	.8624[a]	-.3684[a]	.7690[a]	.2400[a]	-.1798[a]	.9090[a]	---
Friendly	-.3710[a]	.1256[a]	-.7188[a]	-.4604[a]	.8049[a]	-.8320[a]	-.5895[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$

Table 27. Temperament Intersubscale Correlations: Children 24-83 Months

	COMPLY	INHIBIT	INSECURE
Inhibit	-.1339[a]	---	---
Insecure	-.1385[a]	.1247[a]	---
Sociable	.1415[a]	-.4275[a]	-.0935[a]

Note: a = significant at p < .01

Table 28. The Potential Impact of Interviewer on Child Scores: Correlations Between Temperament "Sociability" Score and Other Child Assessments by Age

	HOME COGNITIVE STIM.	HOME EMOTIONAL SUPPORT	M.S.D. STANDARD SCORE	MEMORY FOR LOCATION	BODY PARTS	PPVT-R	VERBAL MEMORY (A & B)	VERBAL MEMORY (C)	BEHAVIOR PROB.	PIAT MATH	PIAT READING RECOG.	PIAT READING COMP.
8-11 Months	.10	.25[a]	.07	.16[c]	---	---	---	---	---	---	---	---
1 Year	.23[a]	.13[b]	.24[a]	.32[a]	.41[a]	---	---	---	---	---	---	---
2 Years	.14[a]	.06	.20[a]	.18[a]	.37[a]	---	---	---	---	---	---	---
3 Years	.23[a]	.13[b]	.22[a]	.14[a]	---	.26[a]	.45[a]	.34[a]	---	---	---	---
4 Years	.24[a]	.19[a]	---	---	---	.36[a]	.47[a]	.41[a]	-.18[a]	---	---	---
5 Years	.14[b]	.15[a]	---	---	---	.20[a]	.30[a]	.27[a]	-.05	.27[a]	.30[a]	.27[a*]
6 Years	.08	.17[a]	---	---	---	.16[a]	.14[b]	.21[a]	-.08	.12[b]	.21[a]	.19[a*]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$;
* = PIAT Reading Comprehension raw score used for 5 and 6 year olds and standard score for ages 7 and over

Table 29. Linkage Between Motor and Social Development Reference Numbers and Mother Supplement Questionnaire Items

REFERENCE NUMBER	AGE OF CHILD			
	0-3 MONTHS	4-6 MONTHS	7-9 MONTHS	10-12 MONTHS
C2685.01	MS0332	MS0347	MS0362	MS0412
C2685.02	MS0333	MS0348	MS0363	MS0413
C2685.03	MS0334	MS0349	MS0364	MS0414
C2685.04	MS0335	MS0350	MS0365	MS0415
C2685.05	MS0336	MS0351	MS0366	MS0416
C2685.06	MS0337	MS0352	MS0367	MS0417
C2685.07	MS0338	MS0353	MS0368	MS0418
C2685.08	MS0339	MS0354	MS0369	MS0419
C2685.09	MS0340	MS0355	MS0370	MS0420
C2685.10	MS0341	MS0356	MS0371	MS0421
C2685.11	MS0342	MS0357	MS0372	MS0422
C2685.12	MS0343	MS0358	MS0373	MS0423
C2685.13	MS0344	MS0359	MS0374	MS0424
C2685.14	MS0345	MS0360	MS0375	MS0425
C2685.15	MS0346	MS0361	MS0376	MS0426

REFERENCE NUMBER	AGE OF CHILD			
	13-15 MONTHS	16-18 MONTHS	19-21 MONTHS	22-47 MONTHS
C2685.01	MS0427	MS0442	MS0457	MS0472
C2685.02	MS0428	MS0443	MS0458	MS0473
C2685.03	MS0429	MS0444	MS0459	MS0474
C2685.04	MS0430	MS0445	MS0460	MS0475
C2685.05	MS0431	MS0446	MS0461	MS0476
C2685.06	MS0432	MS0447	MS0462	MS0477
C2685.07	MS0433	MS0448	MS0463	MS0478
C2685.08	MS0434	MS0449	MS0464	MS0479
C2685.09	MS0435	MS0450	MS0465	MS0480
C2685.10	MS0436	MS0451	MS0466	MS0512
C2685.11	MS0437	MS0452	MS0467	MS0513
C2685.12	MS0438	MS0453	MS0468	MS0514
C2685.13	MS0439	MS0454	MS0469	MS0515
C2685.14	MS0440	MS0455	MS0470	MS0516
C2685.15	MS0441	MS0456	MS0471	MS0517

Table 30. Correlations Between Motor and Social Development Score and Other Child Assessment Scores by Age

	HOME COGNITION STIMULATION	HOME EMOTIONAL SUPPORT	MEMORY FOR LOCATION	BODY PARTS	PPVT-R	VERBAL MEMORY (A & B)	VERBAL MEMORY (C)
0-7 Months	.32[a]	.19[a]	---	---	---	---	---
8-11 Months	.23[a]	.19[b]	.08	---	---	---	---
1 Year	.33[a]	.18[a]	.16[a]	.21[a]	---	---	---
2 Years	.30[a]	.11[b]	.13[a]	.34[a]	---	---	---
3 Years	.46[a]	.28[a]	.12[b]	---	.31[a]	.29[a]	.24[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$

Table 31. Component Items of Behavior Problems Index – Total and Subscores

REFERENCE NUMBER	TOTAL SCORE (C2691.) EVER IN SCHOOL	TOTAL SCORE (C2691.) NEVER IN SCHOOL	ANTISOCIAL SUBSCORE (C2692.) EVER IN SCHOOL	ANTISOCIAL SUBSCORE (C2692.) NEVER IN SCHOOL	ANXIOUS/ DEPRESSED SUBSCORE (C2693.)	HEADSTRONG SUBSCORE (C2694.)	HYPERACTIVE SUBSCORE (C2695.)	DEPENDENT SUBSCORE (C2696.)	PEER CONFLICT/ WITHDRAW SUBSCORE (C2697.)
C2725.01	X	X			X				
C2725.02	X	X			X				
C2725.03	X	X				X			
C2725.04	X	X	X	X					
C2725.05	X	X			X				
C2725.06	X	X				X			
C2725.07	X	X					X		
C2725.08	X	X					X		
C2725.09	X	X	X	X					
C2725.10	X	X				X			
C2725.11	X	X	X	X					
C2725.12	X	X							X
C2725.13	X	X					X		
C2725.14	X	X			X				
C2725.15	X	X							X
C2725.16	X	X					X		
C2725.17	X	X					X		
C2725.18	X	X				X			
C2725.19	X	X				X			
C2725.20	X	X			X				
C2725.21	X	X							X
C2725.22	X	X	X	X					
C2725.23	X	X						X	
C2725.24	X	X						X	
C2725.25	X	X						X	
C2725.26	X	X						X	
C2725.27	X		X						
C2725.28	X		X						

Table 32. Reliability of the Behavior Problems Index: Original Zill Estimates and CHRR Estimates from the 1986 NLSY Child Data

	ALPHA COEFFICIENTS	
	ZILL (4-11 YEAR OLDS)	NLSY (4 YEARS AND OVER)
Total (28)	.89	
Total - never in school (26)		.86
Total - ever in school (28)		.87
Antisocial (6)	.66	
Antisocial - never in school (4)		.54
Antisocial - ever in school (6)		.66
Anxious (5)	.66	.58
Headstrong (5)	.73	.69
Hyperactive (5)	.68	.66
Dependent (4)	.69	.60
Peer Conflict (3)	.54	.56

Note: Number of scale items indicated in parentheses. The Zill reliability coefficients were based on between 5515 and 5919 respondents for all items. The NLSY coefficients were based on about 2500 cases for the five subscales appropriate for all children, about 1700 for the two in-school scales and about 750 for the two never in school scales.

Table 33. Correlations Between Behavior Problems Index and Various Aptitude/Achievement Scores by Age of Child

	PPVT-R	VERBAL MEMORY (A & B)	VERBAL MEMORY (C)	PIAT MATH	PIAT READING RECOGNITION	PIAT READING COMPREHENSION	DIGIT SPAN
4 Years	-.07	-.08	-.08	---	---	---	---
5 Years	-.11[b]	-.15[a]	-.12[b]	-.10[c]	-.15[a]	-.13[b*]	---
6 Years	-.10	-.09	-.11[c]	-.10	-.11[c]	-.07[*]	---
7 Years	-.22[a]	---	---	-.15[c]	-.16[b]	-.14[c]	-.11
8 Years	-.01	---	---	-.03	-.02	-.10	-.12
9 Years and Over	-.10[c]	---	---	-.07	-.17[a]	-.07	-.16[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$;
* = PIAT Reading Comprehension raw score used for 5 and 6 year olds and standard score for age 7 and over

Table 34. Correlations Between Body Parts and Other Child Assessment Scores by Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	MOTOR AND SOCIAL DEVELOPMENT	MEMORY FOR LOCATION
One Year	.25[a]	.20[a]	.21[a]	.22[a]
Two Years	.32[a]	.10[c]	.34[a]	.06

Note: a = significant at $p < .01$; c = significant at $p < .10$

Table 35. Correlations Between Memory for Location Score and Other Child Assessment Scores By Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	MOTOR AND SOCIAL DEVELOPMENT	BODY PARTS	PPVT-R	VERBAL MEMORY (A & B)	VERBAL MEMORY (C)
8-11 Months	.13	.15[c]	.08	---	---	---	---
One Year	.17[a]	.09	.16[a]	.22[a]	---	---	---
Two Years	.04	.12[b]	.13[a]	.06	---	---	---
Three Years	.06	.04	.12[b]	---	.10[c]	.12[b]	.09[c]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$

Table 36. Correlations Between Verbal Memory Scores and Other Child Assessment Scores By Age

	HOME COGNITIVE STIM.	HOME EMOTNL. SUPPORT	MOTOR & SOCIAL DEVLPMT.	MEMORY FOR LOCATION	PPVT-R	BEHAVRL. PROBLEMS	VERBAL MEMORY (C)	PIAT MATH	PIAT READING RECOG.	PIAT READING COMP.
Verbal Memory (A & B)										
3 Years	.19[a]	.12[b]	.28[a]	.12[b]	.34[a]	---	.67[a]	---	---	---
4 Years	.29[a]	.17[a]	---	---	.38[a]	-.08	.55[a]	---	---	---
5 Years	.17[a]	.18[a]	---	---	.41[a]	-.15[a]	.47	.33[a]	.29[a]	.25[a*]
6 Years	.10[c]	.07	---	---	.33[a]	-.09	.27[a]	.40[a]	.28[a]	.35[a*]
Verbal Memory (C)										
3 Years	.17[a]	.14[a]	.24[a]	.09[c]	.32[a]	---	---	---	---	---
4 Years	.21[a]	.14[a]	---	---	.34[a]	-.08	---	---	---	---
5 Years	.14[b]	.13[b]	---	---	.27[a]	-.12[b]	---	.19[a]	.24[a]	.23[a*]
6 Years	.11[c]	.01	---	---	.21[a]	-.11[c]	---	.14[b]	.04	.12[c*]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$;
* = PIAT Reading Comprehension raw score used for 5 and 6 year olds

Table 37. Self Perception Profile for Children: Correlations Among Individual Items and Between Items and Subscore Totals

	SCHOLASTIC SCORE	ITEM 1	ITEM 3	ITEM 5	ITEM 7	ITEM 9
Scholastic Score	--	--	--	--	--	--
Item 1	.62	--	--	--	--	--
Item 3	.53	.21	--	--	--	--
Item 5	.62	.20	.18	--	--	--
Item 7	.60	.23	.16	.22	--	--
Item 9	.63	.37	.24	.29	.25	--
Item 11	.66	.29	.17	.31	.36	.27

	GLOBAL SCORE	ITEM 2	ITEM 4	ITEM 6	ITEM 8	ITEM 10
Global Self-Worth Score	--	--	--	--	--	--
Item 2	.59	--	--	--	--	--
Item 4	.56	.23	--	--	--	--
Item 6	.55	.24	.12	--	--	--
Item 8	.66	.23	.14	.27	--	--
Item 10	.68	.26	.22	.28	.52	--
Item 12	.55	.21	.26	.12	.16	.16

Note: All correlations significantly different from zero at the $p < .01$ level.

Table 38. Correlation Between SPPC Scores (Global Self-Worth Score and Global Scholastic Score) and Other Child Assessments by Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	PPVT-R	BEHAVIOR PROBLEMS	PIAT MATH	PIAT READING RECOGNITION	PIAT READING COMPREHENSION	DIGIT SPAN	GLOBAL SCHOLASTIC
Global Scholastic									
8 Years	-.03	.02	.09	-.05	-.01	.01	.03	.03	---
9 Years	.17[a]	.07	.26[a]	-.15[a]	.27[a]	.22[a]	.24[a]	.20[a]	---
Global Self-Worth									
8 Years	.07	.20[b]	.09	-.15[c]	-.01	-.06	-.04	.03	.29[a]
9 Years and Over	.11[c]	-.02	.05	-.10[c]	.09	.05	.03	.05	.36[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$

Table 39. Correlations Between Digit Span Score and Other Child Assessment Scores By Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	PPVT-R	BEHAVIOR PROBLEMS	PIAT MATH	PIAT READING RECOGNITION	PIAT READING COMPREHENSION
7 Years	.21[a]	.20[a]	.23[a]	-.11	.44[a]	.44[a]	.40[a]
8 Years	.19[b]	.18[b]	.30[a]	-.12	.38[a]	.41[a]	.44[a]
9 Years and Over	.15[a]	.08	.31[a]	-.16[a]	.40[a]	.41[a]	.38[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$

Table 40. Correlations Between PIAT Scores and Other Child Assessment Scores By Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	PPVT-R	BEHAVIOR PROBLEMS	PIAT READING RECOGNITION	PIAT READING COMPREHENSION	DIGIT SPAN
PIAT Math							
5 Years	.27[a]	.26[a]	.47[a]	-.10[c]	.48[a]	.49[a*]	---
6 Years	.22[a]	.17[a]	.47[a]	-.10	.52[a]	.45[a*]	---
7 Years	.22[a]	.29[a]	.50[a]	-.15[c]	.61[a]	.58[a]	.44[a]
8 Years	.17[b]	.36[a]	.54[a]	-.03	.59[a]	.61[a]	.38[a]
9 Years and Over	.19[a]	.10	.57[a]	-.07	.63[a]	.57[a]	.40[a]
PIAT Reading Recognition							
5 Years	.40[a]	.33[a]	.42[a]	-.15[a]	---	.81[a*]	---
6 Years	.16[a]	.15[b]	.30[a]	-.11[c]	---	.77[a*]	---
7 Years	.15[b]	.22[a]	.37[a]	-.16[b]	---	.84[a]	.44[a]
8 Years	.15[c]	.23[a]	.45[a]	-.02	---	.81[a]	.41[a]
9 Years and Over	.28[a]	.12[b]	.56[a]	-.17[a]	---	.76[a]	.41[a]
PIAT Reading Comprehension							
5 Years	.32[a]	.27[a]	.36[a]	-.13[a]	---	---	---
6 Years	.17[a]	.05	.26[a]	-.07	---	---	---
7 Years	.16[b]	.20[a]	.31[a]	-.15[c]	---	---	.40[a]
8 Years	.21[a]	.27[a]	.51[a]	-.10	---	---	.44[a]
9 Years and Over	.24[a]	.15[a]	.60[a]	-.07	---	---	.38[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$;
* = PIAT Reading Comprehension raw score used for 5 and 6 year olds and standard score for ages 7 and over

Table 41. Correlations Between PPVT-R Score and Other Child Assessment Scores By Age

	HOME COGNITIVE STIMULATION	HOME EMOTIONAL SUPPORT	VERBAL MEMORY A & B	VERBAL MEMORY C	BEHAVIOR PROBLEMS	PIAT MATH	PIAT READING RECOGNITION	PIAT READING COMPREHENSION	DIGIT SPAN
3 Years	.37[a]	.37[a]	.34[a]	.32[a]	---	---	---	---	---
4 Years	.43[a]	.32[a]	.38[a]	.34[a]	-.07	---	---	---	---
5 Years	.41[a]	.38[a]	.41[a]	.27[a]	-.11[b]	.47[a]	.42[a]	.36*[a]	---
6 Years	.24[a]	.22[a]	.33[a]	.21[a]	-.10	.47[a]	.30[a]	.26*[a]	---
7 Years	.37[a]	.27[a]	---	---	-.22[a]	.50[a]	.37[a]	.31[a]	.23[a]
8 Years	.31[a]	.35[a]	---	---	.01	.54[a]	.45[a]	.51[a]	.30[a]
9 Years and Over	.28[a]	.20[a]	---	---	-.10[c]	.57[a]	.56[a]	.60[a]	.31[a]

Note: a = significant at $p < .01$; b = significant at $p < .05$; c = significant at $p < .10$