Patterning of Child Assessment Completion Rates

in the NLSY: 1986-1996

By
Frank L. Mott
with the assistance of Loretta Pierfelice
Center for Human Resource Research
The Ohio State University

November 1998

Table of Contents

List of Tables

HIGHLIGHTS AND SUMMARY

In this paper, we have examined several linked issues associated with the NLSY79 child interviewing process. Firstly, is there any substantial evidence of changes in interview quality, as evidenced by changes in assessment or interview completion rates over time? Secondly, is there any substantial evidence of changes in interview quality associated with the transition from a paper and pencil (PAPI) to a computer assisted personal interview (CAPI) mode between 1992 and 1994? Thirdly, are there any pronounced associations between child or family characteristics and completion patterns that may be amenable to programmatic interventions?

With regard to the first question, there is indeed some evidence of declining assessment completion rates in recent survey waves. These do not however appear to be associated with the change to CAPI technology. Declines in completion rates appear to be prevalent for children of all ages. In general, the 1986 through 1990 survey rounds had higher completion rates, but this finding does not hold evenly for all subgroups. Additionally, in most survey rounds, the oldest children, age 12 and older, have had the lowest completion rates. The 1996 completion rates for the PIAT assessments are lower then in all other survey rounds; this primarily reflects declines for Hispanic youth.

Recent declines in Behavior Problem completion patterns are much more modest. These declines are limited to the minority sample. In general, completion rates are higher for the PAPI administered Behavior Problems scale then for the CAPI administered PIAT assessments.

Additionally, with the shift to CAPI PIAT administration in 1994, there are no apparent aggregate changes in mean scores between 1992 and 1994. There is however a consistent long-term upward trend in PIAT scores, and improvements in Behavior Problem scores over the 1986-1996 period, reflecting the increasing heterogeneity of the sample towards more fully representing children who have been born to women who were 14 to 21 at the surveys inception in 1979.

It is generalized that PIAT retention rates from survey round to survey round are poorest for the 1988 to 1990 and the 1994 to 1996 survey transitions. Both the 1990 and 1996 survey rounds had more severe financial constraints associated with them, which may have affected the quality of the fieldwork. Additionally, the cadre of interviewers available for the 1996 interview round was on average less experienced then in the immediately preceding rounds. This partly is related to the shift to a biennial interviewing mode beginning with the 1996 interview round. In contrast, retention from 1992 to 1994 exceeded that for all other transition points; this transition

is associated with the shift from PAPI to CAPI interviews for the PIAT administration. No parallel 1992 to 1994 improvement was in evidence for the Behavior Problems battery, which continued to be paper-administered.

In general, for both the PIAT and BP assessments, Hispanic youth systematically show the poorest patterns of assessment retention over time. This undoubtedly is linked with their, on average, poorer English language capability. In recent survey rounds, this pattern is particularly in evidence for the mother self-report Behavior Problems assessment. For African-American female respondents, there also is evidence of significantly lower maternal reports on the Behavior Problems scale. This may also reflect their likelihood of, on average, poorer reading skills.

In a somewhat parallel finding, there is systematic evidence of an increasing tendency for children who do not receive a score in one survey round to also not receive a score, or to not be interviewed in the subsequent round, than had been true in the earliest child testing waves. In other words, for children of all ages, and in all racial/ethnic groups, the likelihood of not receiving a score in year T+2 if one has not received a score in year T has increased considerably in the more recent survey rounds. The ability to recoup sample losses is not being done as successfully as had been true in the earliest survey years. This phenomenon is much more in evidence for the PIAT assessments than for the Behavior Problems scale.

An examination of the characteristics of children who are most likely to make a transition from being scored at time T to not being scored at time T+2 suggests several findings. The attriters tend to disproportionately be the oldest children. They are also the children of less educated mothers, and children who scored the poorest at the base year T point. Additionally, children who did not have siblings in the home were more likely to attrite. For the most part, this transition to not being tested associated with these characteristics was related to sample loss, not just selectively not being tested on a particular assessment. This helps explain why generally similar results were found for both the CAPI administered PIATS and the PAPI administered Behavior Problems scale. It is suggested that this selective attrition reflects several factors. This includes embarrassment and discouragement among the less educated, less literate mothers and children, extra incentives for interviewers to complete interviews with families that include several children eligible to be interviewed, and perhaps a greater likelihood for older children not to be available when the interviewer comes calling. From an analytical perspective, the selective loss associated with having previously scored poorly may be of the greatest importance. It effectively implies that longitudinal analyses may increasingly be losing sample cases that are selective of what in many instances represents important research outcome measures.

INTRODUCTION

Since 1986. with the support of the National Institute of Child Health and Human Development (NICHD).

all the children of the interviewed female respondents in the National Longitudinal Survey of Youth (NLSY79) have

biennially completed a variety of cognitive and socio-emotional assessments. (See the brief bibliography at the end

of this document for several publications that describe both the NLSY main and Child data in some detail). To date.

several hundred research papers have been completed that examine connections between the children's family

environment and how they performed on these tests. As is detailed below. in many instances. children have been

repeatedly given the same assessments. In some instances. the children are directly assessed. whereas in other

instances. information about the children is collected directly from the mothers. Finally. beginning in 1994. much of

the Child data collection changed from a paper and pencil mode to computer assisted personal interviews.

Additionally. at various times over the decade. funds available for the Child data collection was more constrained

then at other times. This evaluation will attempt to clarify the degree to which these issues have impacted on the

quality of the Child Assessment data collection.

EVALUATION PROCEDURES

In this paper, we examine the patterning of completion rates on selected NLSY Child Assessments over the

1986 to 1996 period. We focus in particular on three assessments. the PIAT Mathematics and Reading Tests. and

the Behavior Problems scale. These three assessments were chosen for specific reasons. First. they are assessments

that are completed by age-eligible children in all the years in which they are eligible. It was therefore possible to

explore attrition patterns for the same children for a series of consecutive assessment rounds.

With respect to the Behavior Problems scale. all children age four and over (age 4 through 14 in 1994 and

1996) are eligible for this mother-completed assessment. The mother is asked a series of 28 questions about her

child's behavior. and records her choices in a paper instrument. The PIAT assessments have been administered

biennially to all children age 5 and over (5 through 14 beginning in 1994) in all the survey years they were age-

eligible. Thus. for most children. we have multiple survey points that they were eligible to have the assessments

administered. permitting a careful longitudinal examination of the extent to which completion patterns for the same

children are predictable on the basis of demographic priors and prior completion patterns.

We selected two assessments from the NLSY "Child Supplement" (the PIATS), which includes assessments directly administered to the child, and one assessment from the "Mother Supplement" (the Behavior Problems scale) which is completed by the mother about the child. The Child Supplement assessments are administered directly by the interviewer to the child. Between 1986 and 1992, these assessments were administered through a "paper and pencil" mode, with the interviewer verbally asking the children their responses, and then recording them in a paper document (PAPI). Beginning in 1994, and continuing in 1996, there was a shift in administration to computer assisted personal interview (CAPI) mode where the interviewer continued to verbally ask the child for his or her responses, but then entered the response directly into the computer. More fundamentally, beginning with the 1994 interviews, the interviewer's assessment instructions shifted from a paper interview schedule mode to an electronic one. This transition to CAPI administration essentially made it much more difficult for the interviewer to inadvertently skip items as well as to inadvertently completely skip an assessment. The anticipation is that this shift in interviewing mode would reduce the likelihood that an item within an assessment, or indeed, a complete assessment would be skipped.

In contrast, the Behavior Problems scale has continued to be completed by the mother herself in a paper and pencil instrument. Following completion of this assessment (as well as others in this same paper instrument), the mother hands the instrument to the interviewer, who checks that the assessment has been appropriately completed. While many interviewers are conscientious in this regard, some are less careful then others. Thus, one might anticipate that beginning with the 1994 shift to a CAPI administration mode for the Child but not the Mother supplement instruments, differential tendencies for assessment completion between the PIATS and the Behavior Problem scale might appear. Additionally, and most importantly, a major objective of this evaluation was to examine whether the shift in PIAT administration from a PAPI to CAPI mode led to any apparent "mode effects" in completion patterns, or perhaps in actual response patterns. Mode effects can be of several different types. First, there may be discontinuities in *overall completion* rates that would show up as general improvements or deterioration in child completion rates. Second, there may be selective changes in completion patterns for the CAPI administered assessments in comparison with the PAPI administered assessments. Third, and more subtly, there may be evidence of changes in the actual scores of children, an issue we have already considered in an earlier paper (Baker and Mott, 1995). These latter changes might reflect changes in the tendency of youth to selectively be more or less likely to enter an assessment, or to continue to higher or lower levels. For example, if there is significant

2

evidence that children from higher or lower socio-economic background are more or less likely to now enter or complete an assessment, then the expectation might be that the overall distribution of scores could change as there is a shift from non-CAPI to CAPI mode.

More generally, an over-riding objective of this paper is to examine whether or not there have been any major changes in the tendency of children or mothers to continue to be interviewed, or more specifically, to maintain high completion rates on the specific assessments. Beyond any CAPI mode effects, do we find evidence of any significant changes in the quality of assessment over time? For example, transitions in quality over time can have two basic causes: first, a child may no longer be interviewed, either because his/her mother is no longer completing her interview, or because the child is not interviewed/assessed even while his/her mother *is* interviewed. Second, a child may be available to be interviewed, and indeed may *partially* complete relevant assessments, but cannot be scored for a particular assessment (e.g., PIAT Mathematics). Clearly, these two different kinds of problems may reflect different causes. We consider these two kinds of non-completion separately in this evaluation.

In the various descriptive materials included in this paper the first of these two kinds of non-completion, which refers to a child not being interviewed at all, is sometimes identified by a −5 code, which in NLSY Child terminology refers to a child who was not interviewed or assessed. If a child was at least partially interviewed, but did not complete a particular assessment, this is typically identified by a −3 code.

OVERALL ASSESSMENT COMPLETION RATES

In this section, we examine the patterns of completion by age and race/ethnicity for the two PIATs and the Behavior Problems scale for age-eligible children over the 1986 to 1996 period. The statistics in Table 1 represent individual assessment completion rates for children who were known to be otherwise interviewed in that particular year (i.e., children who received a score on an assessment where the denominator includes all children who either received a score or were coded −3). Overall, on PIAT Mathematics, it may be seen that completion rates in the earlier 1986-1990 period were slightly higher then for the 1992-1996 period, although there is no apparent discontinuity, either up or down, associated with the shift to CAPI in 1994.

For the most part, year-to-year variations that appear for the specific age groups also do not appear to be systematic. One age variation of interest is that generally, completion rates for the oldest, 12-14 year old youth are slightly lower. While there is a tendency to speculate that this age variation may be related to increasing resistance

3

to being tested as time goes by, it is suggested that this is not likely to be the case, as in 1986, the first assessment year, the oldest children already have the lowest completion rate.

Also, there appears to be a slightly lower completion rate evidenced in 1996 compared with all the earlier survey rounds, and this pattern reflects a lower Hispanic completion pattern. This also will be evaluated more carefully in subsequent Tables. These individual assessment completion patterns are, of course, contingent on the overall *survey* completion rates, which will be highlighted below. The patterns in Table 1 are those which are typically examined in any single-year evaluation, as they are related to the children who were actually available to be interviewed in a given year. Thus, they may be fairly considered as useful proxies for the quality of the specific assessing process in a given year.

Not surprisingly, the completion patterns for PIAT Reading Recognition essentially parallel those evidenced for Mathematics. The administration of this assessment immediately follows the mathematics administration. In the pre-CAPI years, it was somewhat easier for a recalcitrant child or mother respondent to break the interview at that point. Beginning in 1994 with CAPI, this break became more difficult, reflecting the more mechanical transition from one assessment to the next. This may explain the generally closer correlation between the Mathematics and Reading completion rates in 1994 and 1996 compared with the earlier PAPI administration years. As may be seen in Table 2, while the changes are not huge, there is some systematic evidence of greater continuity between mathematics and reading in 1994 and 1996 compared with 1992 and 1990. The probability of being scored on both assessments is slightly higher in the latter two surveys than in the immediately earlier waves. For this reason, much of the remaining evaluation in this paper will be limited to PIAT Mathematics and Behavior Problems.

In almost all instances, completion rates for the mother-administered Behavior Problems scale are slightly higher than for the PIATS that have been directly administered to the children. Also, the slight age variation suggested for the PIAT is not in evidence for the Behavior Problems scale (hereafter termed "BP"). It may be that mothers are slightly more willing to continue being involved in the study than are their children, at least as evidenced by individual assessment completion rates.

As was true for the PIAT, there is some evidence of a slight decline in BP completion in 1996, and this reflects a significant decline in the likelihood of Hispanic, and in this instance, black mothers to complete the assessment. We explore below whether this reflects an overall racial/ethnic trend, or whether it is associated more

4

with selected racial or ethnic characteristics. The issue of greatest importance will be whether this represents a temporary essentially random phenomenon or whether it represents a more enduring tendency by minority children and mothers to resist being tested.

In Table 3, we briefly consider whether or not a shift to CAPI is associated in any overt way with aggregate changes in mean scores between 1992 and 1994/1996. The data suggest no evidence of any discontinuity. As may be seen, with little exception, on an age-specific basis, the scores of the children show systematic "improvements" over time, for both the PIATs and the BP. That is, PIAT scores are systematically increasing over time, and BP scores are declining (implying improved behavior). As we have described elsewhere (e.g. Baker et. al. 1993; 1994 and 1996 NLSY Child Data Users Guide), the NLSY child sample is becoming increasingly more representative of a full cohort of children born to women 14 to 21 years of age in 1979. In the early survey years, the children being assessed were mostly born to younger, more disadvantaged mothers. Increasingly, the children represent a fuller spectrum of youth from a socio-economic perspective. The trend over time toward more favorable scores thus reflects greater heterogeneity of the Child sample. Of course, it is also acknowledged that some of this trend may reflect the possibility that with repeated test-taking administration, children have learned improved test-taking procedures, and mothers are evidencing a greater reticence to inform others about negative behaviors their children may follow.

MEASURING COMPLETION TRANSITION PROBABILITIES OVER TIME: A MICRO PERSPECTIVE

An effective longitudinal panel survey should include a substantial proportion of sample cases for which repeated measurements are available. An effective interviewing regime will include mechanisms for recapturing sample cases that have been lost. In this analysis, we will explore some of these issues. We will consider both (1) the propensity of children to be maintained on a continuing basis in the interview process, as well as (2) the probability of a child who cannot be scored in one survey round being scored or not scored in subsequent waves. We explore how these transition probabilities may vary by age or race/ethnicity. In particular, we examine whether or not there is any evidence of deterioration or improvement in completion status over time, including mode effects that might be associated with the shift to CAPI technology.

Table 4 examines status transition probabilities between 1986 and 1996 for the overall sample, as well as separately for black, Hispanic and other non-Hispanic non-black youth. We focus on the results for PIAT

Mathematics and Behavior Problems. as other data. not presented here. show essentially similar results between PIAT Mathematics and Reading Recognition. Focusing first on PIAT Math. it may be seen that regardless of the survey round. the large majority of children who are interviewed in one survey round are also interviewed in the next biennial data collection effort (see the score $\rightarrow$ score probabilities column). To the extent that a pattern over time is evidenced. it suggests the following. First. for all except Hispanics. the first two rounds of data collection. 1986 and 1988 witnessed relatively high retention probabilities. Also. retention rates were at their lowest between 1988 and 1990. It is useful to note that in the weeks leading up to the 1990 survey round. there was a temporary but very significant "budget crunch" which may well have impacted on the quality of the field work[1]. Indeed. for all groups. retention improved considerably between 1990 and 1992 showing even further improvement with the introduction of CAPI in 1994 for all except Hispanic children. As may also be seen in Table 5. this completion pattern is in evidence for children at all ages. This represents the single most persuasive evidence of how the introduction of improved interviewing technology can enhance completion patterns. It is useful to reiterate that maintaining a score from one survey round to the next involves both maintaining mother and child interviews as well as maintaining an assessment-specific completion protocol for children. maximizing the likelihood that children who are available to be interviewed do indeed complete the various assessments.

Having maintained relatively high completion levels from 1992 to 1994. it may then be seen that there were relatively sharp systematic declines in assessment retention from 1994 to 1996. These declines mirror the several percentage point decline in overall NLSY completion rates from 1994 to 1996. The reason for the main survey decline in completion rates to some extent remains unclear. We speculate that this partly reflects cost constraints and perhaps partly is due to an increasing resistance to being interviewed. a phenomena which many feel is increasingly prevalent in many national surveys.

It is useful to reiterate our finding for Hispanic youth. It is clear that for all survey rounds Hispanic youth are least likely to be retained from round to round. Part of this lower Hispanic completion pattern reflects the fact that the PIAT assessments are administered only in English. Thus. youth who have poorer English language skills will be less likely to repeat the assessment after one perhaps discouraging attempt. However. it is likely that Hispanic reticence on the NLSY assessments goes beyond the availability of Spanish language interview schedules.

---

[1] Between 1988 and 1990. an oversample of economically disadvantaged white youth were deleted from the sample for cost reasons. However, these children are not included in our analysis. Thus, the higher 1988-1990 attrition pattern cannot be attributed to this specific sample loss.

As will be noted below. there is a similar. albeit not as pronounced. pattern of lesser completion for the BP scale - an assessment which can also be administered in Spanish for mothers less fluent in English[2].

Table 4 also clarifies the likelihood of several other transition possibilities. and how they may have changed over time. First. in more recent survey rounds. it appears that if a youth is eligible for an interview but does not complete PIAT Mathematics. there is about a one third chance that he/she will fall into the same non-interview status in the next assessment round (-3 → -3). Of greater significance. the likelihood that he/she will not be interviewed at all in the next round (-3 → -5) has been escalating in recent years. from .14 between 1990 and 1992. to .21 between 1992 and 1994. to .31 between 1994 and 1996. As an additional predictor of perhaps declining perseverance in scoring cases not scored in the previous interview wave. it is particularly useful to examine the probability of completing a PIAT assessment in year T+2 for children who did not complete PIAT Math (-3) in year T (for children who were age eligible to do so). In 1992. fully 56% of children so defined in 1990 were interviewed. The comparable statistic for 1992 to 1994 was 45% and for 1994 to 1996 was 36%. This pattern is in evidence for children at all ages (see Table 5). In summary. the likelihood of sustaining a very high assessment completion rate in recent years has declined slightly. and the probability of recouping "lost" cases has declined very sharply.

We now consider parallel statistics for the mother-administered Behavior Problems scale. While somewhat erratic. it may be fair to suggest that the tendency to obtain a BP score in successive waves is slightly lower for BP than for the PIAT assessments. Retention rates are substantially lower for black and Hispanic than for other white-non-Hispanic children on this maternal self-administered assessment. perhaps reflecting somewhat lower literacy skills for minority mothers. While it is permissible for interviewers to assist by administering this assessment to the mother. there may. in some instances. be reluctance to do so. This may account for the somewhat greater white-non-Hispanic-minority discrepancy in completion rates on this assessment compared with the PIAT battery.

Conversely. for all population subgroups. there is a much greater likelihood of a transition from no score to score between T and T+2 on the BP in comparison with the PIATs. This may be because there is a much greater

---

[2] There may be one other factor that, to an unknown extent, may be associated with the differential Hispanic child sample loss. At least in recent survey rounds, the field period for intensive interviewing of Hispanic families has been somewhat delayed, reflecting some delays in the completion of Spanish language instruments. Additionally, as one nears the end of the interview field period, typically, the percentage of interviews that are completed over the telephone increases somewhat. Juxtaposing these two possibilities might imply a somewhat below average Hispanic assessment completion rate, given that the Child Assessments cannot be readily completed over the phone.

likelihood of randomly missing items on the BP scale in any one year. This is more likely to be a random one-time occurrence.

In terms of time trends, as with PIAT Math, there is evidence of a deterioration in score retention for BP, in particular from the 1994 to the 1996 survey rounds. This pattern is in evidence for all racial/ethnic groups (Table 4) and for all age groups (Table 6). The suggestion is made that perhaps training procedures need some re-evaluation. It may be seen from Table 4 that virtually all the indicators point to a decline in sample maintenance and, indeed, in an increasing difficulty in regaining lost cases. Given that deterioration is in evidence for both PIAT and BP, and more prevalent for 1994 to 1996 then for 1992 to 1994, it is not likely that this trend is CAPI-linked.

CHARACTERISTICS OF SAMPLE AND ASSESSMENT ATTRITERS

In this section, we use multivariate techniques to partially clarify the extent to which selected family or child characteristics are useful independent predictors, of children who tend to either not be interviewed (i.e., leave the survey between interview rounds), or if interviewed, not be tested on the PIAT or BP assessments. We will specifically examine trends in the importance of these predictors over time as well as changes in predictors of discontinuity that might be associated with the transition to CAPI.

Table 7 includes odds ratios that examine the potential independent importance of a variety of child and family antecedents as predictors of making a transition from receiving a PIAT Math score in year T to (1) not being interviewed in year T+2, (2) being interviewed but not receiving a score at T+2, or (3) either of the above. In all cases, the T+2 reference category is receiving a score in year T+2. Before highlighting the results of these multivariate analyses, it is useful to clarify the meaning of "not being interviewed." A child may not be interviewed either because his/her mother was not interviewed (in which case the child is not eligible for interview), or because he/she was not interviewed even though the mother was. To some extent these two categories of child non-completers may be very differently motivated. In the former case, being interviewed may be beyond the child's control. In the latter case, there is clearly a greater likelihood that the child's action was volitional, and that he/she was independently motivated not to be interviewed, although even here this is far from certain.

Thus, it is very possible that the motivations behind these two different forms of non-completion could differ. The number of sample cases available is insufficient for examining these two categories of non-completers separately. However, multivariate analyses we have completed for the 1994 to 1996 transition (not included in any

of the Tables) suggest that children who are not interviewed differ to some extent depending on whether or not their mother had been interviewed. Specifically, children who are not interviewed because their mothers were *not* interviewed are more likely to be male, minority (black or Hispanic), and have mothers who *were not* high school dropouts. Of course, from a mirror image perspective, the implication is that white girls whose mothers have little education are the ones who are most likely not to be interviewed even though their mother's *were* interviewed—i.e., to have been independently motivated to have attrited from the sample!

In the remaining Tables, we examine the characteristics of children and families who over the years have been most and least successful in maintaining continuing ties with the NLSY child interview process, using standard logit multivariate techniques. In all instances, we present the independent probabilities (the coefficients in the Tables are odds ratios) of a child who received a score on a specific assessment at time T not receiving a score at time T+2. As noted earlier, the reference category at time T+2 was receiving a score on the particular assessment at that point. First we consider the PIAT Mathematics results in Table 7. The first set of regressions (the set of 5 on the left side of the Table) examine the probability of making a transition from having completed PIAT Mathematics at time T to not being interviewed at all at time T+2 - even though one was age eligible.

As a reminder, this multivariate analysis has several objectives. The first is to examine whether or not there are any uniform predictors of poorer or better completion across all years. The second is to consider whether there are factors which might have been linked with the transition to CAPI (the implication being that these factors would then appear as predictors of non-completion for PIAT but not the BP assessment following the transition). The third is to examine any changes that may have developed over time, which suggest possible interventions, or changes, in interviewing procedures.

The reader should recall that significant odds ratios less than one imply inverse associations between that factor and the outcome, whereas significant coefficients greater than one imply a positive association. We have taken the liberty of including significance levels beyond what would typically be done in cross-sectional analyses. This is because the major objective is to explore potential trends over time. Whereas a marginally significant coefficient for any one point in time has little, if any meaning, a repetition of marginally significant coefficients over a number of survey points, may have some analytical utility as a potentially useful explanatory factor for clarifying meaningful patterns of association that may have policy relevance.

9

There are a small number of factors that predict a transition from being assessed in mathematics to not being interviewed at the next survey point. First, there is systematic evidence that older children are more likely to leave the survey. This may partly reflect the possibility that after having been given the PIAT Mathematics test a number of times, some children are now resisting, because of boredom or other reasons. However, as noted earlier, it is suggested that this in all likelihood is not a major reason, as the same age pattern was in evidence, indeed in an even more pronounced fashion, in the early survey rounds of 1986 to 1988 and 1988 to 1990. The gradual reduction in the significance of the age 11 and over coefficient over time more likely represents a greater homogeneity in recent years between the older and younger children being tested. This age effect may simply reflect a greater likelihood of older children being more likely to be absent from the home when the interviewer comes, reflecting a much greater likelihood that they are engaged in non-home activities.

The one factor that easily is the strongest continuing predictor of maintaining interviews from survey round to survey round is the sibling variable. It is clear that children in the sample who have siblings—and thus in all likelihood have other children in the family unit eligible to being tested—are substantially more likely to stay in the sample. We can only speculate about the reason(s) for this, but this is a finding that has possible important programmatic significance. It may be that interviewers make a greater effort to maintain contact or to complete maternal interviews where they know several children are present for testing, since the cost of losing that case, in terms of its effect on his/her child case completion record would be greater. Additionally, in a purely statistical sense, the greater number of individuals in a household, the greater the likelihood that at least *some children will be present to be tested!* This issue will be considered further when evaluating the specific test scoring patterns.

Several other factors also appear to be useful predictors of *survey* non-completion, although the coefficients for these factors do not necessarily attain significance at *every* survey point. Children of mothers who have completed less then twelve years of schooling appear more likely to attrite from the study. Additionally, and perhaps related to this finding, is the above average likelihood that children who scored poorly on the mathematics test at time T are more likely to not be interviewed at time T+2. This factor has been quite pronounced in recent survey rounds. The suggestion is made that this may well reflect a lesser willingness by mothers and their children who find the interviewing process psychologically less satisfying to stay involved with the project. It speaks to a possible need to develop strategies that would enhance the willingness of this population subset to *want* to remain as part of the study. The BP results to follow will provide additional insights regarding this issue.

It is also useful to note that there are no obvious patterns either of improvement or deterioration in the interview status transitions either associated with the shift to CAPI, or more generally, for recent survey waves. A possible caveat to this statement is that black youth interview patterns, which had been below average for the 1986 to 1992 period, now are not significantly different from the white non-Hispanic pattern. This improvement cannot be noted for the Hispanic child population. Also, for children living in urban areas, there is a weak appearance of recent deteriorating interview continuance. When additional information becomes available from the 1998 interview wave we may gain some clarification about whether or not these last suggestions are essentially chance occurrences, or whether they represent the beginnings of new systematic patterns.

Predictors of a transition from being scored at one survey point to *being interviewed but not scored* at the next point are much less pronounced, and where significance is noted, it doesn't in all instances even appear significant in the same direction at all survey points! Until the most recent 1994 to 1996 transition interval, older children who had been interviewed had systematically shown a greater resistance to being *scored* in successive surveys, but this was no longer in evidence for the 1994 to 1996 transition. It appears fair to generalize that a transition from being scored at one point to not being scored, although interviewed, at the next survey point is largely a random occurrence.

The five logit regressions on the right side of Table 7 are a synthesis of transitions from score to non-interview, and from score to non-score. In other words, the coefficients represent the probabilities of the various factors predicting a transition from receiving a score on PIAT Mathematics at time T to not receiving a score at time T+2, regardless of the reason for the transition. Given that the various predictors were generally insignificant in the score to no-score equations, what one finds in this last set of equations is that not receiving a score because one has left the survey essentially drives these equations. In other words, the most significant predictors of *not* maintaining a score between T and T+2, regardless of reason, are being an only child and being an older child. The other factors noted earlier generally do not evidence any *systematic* significance pattern.

The overall equations also tend to mask the fairly systematic links between low maternal education, poor child test outcomes at time T, and not being interviewed at time T+2. From the perspective of possibly introducing biases into longitudinal analytical results, this issue needs further field consideration. This finding is surely consistent with the supposition that there may be an embarrassment factor at play; from a respondents perspective,

this embarrassment can perhaps be most readily avoided in subsequent interview waves by simply not being interviewed!

Table 8 includes parallel equations that focus on the PIAT Reading Recognition assessment. The differences between the results for the two PIAT assessments are relatively minor. and thus will not be considered here in any detail. It appears that low maternal education shows a slightly stronger and more systematic link with non-reinterview on Reading then on Mathematics. Also. somewhat impressionistically. the Mathematics and Reading coefficients appear to be more similar to each other for the last two transition periods. This undoubtedly is closely linked with our earlier discussion on the greater mechanical link between those two assessments in 1994 and 1996. with the introduction of CAPI technology.

We now shift to an examination of the equations in Table 9. which focuses on the predictive value of the various antecedents of Behavior Problems (BP) completion. In several fundamental ways. administration of this assessment is very different than was true for the PIAT measures. These are ways that could impact in important respects on the various coefficients. First. this assessment is typically completed by the mother for each of her children. Thus. any embarrassment factor would be one most noticeably felt by the mother herself. and not by the child. However. since this is a maternal self-report exercise. the embarrassment may be minimal. or indeed non-existent. Moreover. mothers who cannot read very well might either do a poorer job on understanding or completing the assessment. and might be too embarrassed to ask the interviewer for assistance. Additionally. mothers who feel that their children have significant behavior problems might be less inclined to *repeatedly* complete the BP battery. Finally. given that BP has a paper and pencil administration. we do not anticipate any completion discontinuities between 1992 and 1994 that differ from the discontinuities present for other survey years.

Even a perfunctory examination of the BP patterns in Table 9 suggests a number of results similar to what was reported for the PIAT assessments as well as results consistent with some of the above hypotheses. Making a transition from having a score to not being interviewed is most pronounced for the older children and for the least educated mothers. These latter mothers would in all likelihood have the greatest difficulty reading and understanding the BP questions. As was also true for the PIATs. children who have siblings are more likely to have their mother complete the questionnaire. (It is also worth noting that mothers receive 5 dollars for each child interview which is completed).

12

Also consistent with some of the above hypotheses. Hispanic children in recent years are less likely to have mothers complete the interview, as are mothers who have children who in previous rounds were reported as having had above average levels of behavior problems. Thus, the suggestion is made that a combination of factors which may represent maternal embarrassment, limited language capability, as well as economic incentives may separately and jointly come into play as predictors of a continuing willingness to be interviewed in the NLSY.

The only factor that is associated with a continued non-willingness to complete the BP even when an interview is otherwise being attempted, is being African American. Given that this pattern is evident independent of all the other socioeconomic or other factors which may be associated with being black, no obvious reason for this pattern can be posited.

BIBLIOGRAPHY

Baker, Paula C. and Frank L. Mott. 1995. "Improving Data Quality through CAPI: Evidence from the 1994 NLSY Child and Young Adult Data." Presented: Annual Meetings of the Population Association of America, San Francisco, April 6-8.

Baker Paula C., Canada K. Keck, Frank L. Mott, Stephen V. Quinlan. 1993. *NLSY Child Handbook, Revised Edition: A Guide to the 1986-1990 National Longitudinal Survey of Youth Data.* Columbus: The Ohio State University, The Center for Human Resource Research.

Bureau of Labor Statistics. *NLS Handbook 1998.* Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics, 1998.

Center For Human Resource Research. 1997. *NLSY79 Users Guide 1997.* Columbus: The Ohio State University, The Center for Human Resource Research.

Center For Human Resource Research. 1997. *NLSY79 1994 Child and Young Adult Users Guide.* Columbus: The Ohio State University, The Center for Human Resource Research.

Center For Human Resource Research. 1998. *NLSY79 1996 Child and Young Adult Data Users Guide.* Columbus: The Ohio State University, The Center for Human Resource Research.

Mott, Frank L. 1995. *The NLSY Children 1992.* Columbus: The Ohio State University, The Center for Human Resource Research.

TABLES

Table 1.   PIAT Mathematics, PIAT Reading Recognition and Behavior Problems: Percent of Scores Which Are Valid (Unweighted Estimates) by Age and Race/Ethnicity, 1986 to 1996

	1986	1988	1990	1992	1994	1996
PIAT Mathematics						
Total	92.4	94.4	92.3	91.1	91.6	90.9
5-6 Years	92.5	94.5	92.9	92.1	93.1	89.2
7-9 Years	92.5	94.9	93.3	92.1	92.0	90.5
10-11 Years	92.2	94.9	90.6	91.9	92.0	92.3
12-14 Years	90.0	90.6	90.7	87.8	89.7	91.5
Hispanic	88.5	92.4	89.1	90.2	90.9	88.0
Black	93.8	96.2	95.6	91.4	92.6	92.3
White	92.9	93.6	91.1	91.4	91.3	91.3
PIAT Reading Recognition						
Total	92.0	93.8	90.9	89.6	91.4	90.7
5-6 Years	91.4	92.8	89.5	87.3	92.4	88.7
7-9 Years	93.2	95.0	92.4	91.4	91.8	90.3
10-11 Years	91.2	94.2	89.5	91.8	91.8	92.2
12-14 Years	88.0	91.6	91.1	87.1	89.7	91.3
Hispanic	87.4	92.4	87.5	88.7	90.3	87.6
Black	94.0	95.5	94.1	89.8	92.3	92.1
White	92.2	92.7	89.8	90.0	91.2	91.1
Behavior Problems						
Total	95.0	91.5	95.1	96.6	94.5	93.0
4-6 Years	95.2	92.0	96.5	97.9	94.5	93.3
7-9 Years	94.7	92.1	94.5	96.1	95.1	92.6
10-12 Years	94.8	89.4	94.0	95.5	94.0	93.0
Hispanic	93.9	91.0	94.6	97.2	94.2	91.8
Black	95.8	90.2	93.6	94.9	93.8	90.2
White	94.8	93.2	96.5	97.5	95.2	95.2

Table 2. PIAT Math to PIAT Reading Within-Year Transition Probabilities

Math to Reading Transition	1986 N	1986 Percent	1988 N	1988 Percent	1990 N	1990 Percent	1992 N	1992 Percent	1994 N	1994 Percent	1996 N	1996 Percent
Math to Reading Transition	1659	1.000	2815	1.000	3467	1.000	4023	1.000	4307	1.000	4048	1.000
Score-Score	1514	.913	2622	.931	3116	.899	3590	.892	3931	.913	3658	.904
Score to –3	48	.029	34	.012	84	.024	75	.019	15	.003	22	.005
–3 to Score	41	.025	18	.006	34	.010	15	.004	3	.001	12	.003
–3 to –3	88	.053	141	.050	233	.067	343	.085	357	.083	356	.088
Gross Change	89	.054	52	.018	118	.034	90	.023	18	.004	34	.008
Net Change	-7	-.004	-16	-.006	-50	-.014	-60	-.015	-12	-.002	-10	-.002

Table 3. PIAT Mathematics, PIAT Reading and Behavior Problems: Mean Weighted Percentile Score by Age and Race/Ethnicity, 1986 to 1996

	1986	1988	1990	1992	1994	1996
PIAT Mathematics						
Total	50.4	48.8	49.9	51.9	53.7	56.6
5-6 Years	51.9	49.4	51.4	53.0	55.4	57.1
7-9 Years	50.6	49.9	50.7	53.8	55.0	58.9
10-11 Years	45.6	47.6	48.5	52.1	54.1	57.7
12-14 Years	42.3	42.5	47.1	46.7	49.5	52.3
Hispanic	41.8	41.1	41.0	42.5	42.9	47.6
Black	38.9	37.4	40.4	39.0	39.2	41.8
White	57.1	54.3	53.8	56.1	58.0	60.4
PIAT Reading Recognition						
Total	61.1	56.8	56.9	58.6	59.1	61.4
5-6 Years	64.4	58.2	59.3	59.6	61.8	65.7
7-9 Years	60.2	58.4	58.3	60.3	59.7	63.0
10-11 Years	54.5	54.6	54.9	58.3	58.1	60.4
12-14 Years	44.6	47.7	51.6	54.6	56.7	56.5
Hispanic	52.6	51.1	49.6	52.4	50.4	54.8
Black	53.8	48.9	49.4	49.5	48.5	50.1
White	65.8	60.8	60.0	61.6	62.4	64.3
Behavior Problems						
Total	65.9	65.5	60.9	60.6	59.9	57.6
4-6 Years	64.8	62.3	56.6	55.7	54.9	50.8
7-9 Years	66.5	67.9	63.5	62.1	60.5	58.8
10-12 Years	71.2	69.4	64.8	65.2	64.6	62.6
Hispanic	63.1	65.6	61.4	61.4	61.9	59.1
Black	67.7	67.2	63.9	64.1	62.9	61.4
White	65.7	65.0	60.1	59.8	59.1	56.8

Table 4. Two-Year Status Transition Probabilities to and from PIAT Mathematics and Behavior Problems by Race/Ethnicity (Ages Refer to Ages in Base Years)

	Mathematics (Ages 5-10)						Behavior Problems (Ages 4-11)					
	-3 → -3	-3 → -5	Score → -3	-3 → Score	Score → -5	Score → Score	-3 → -3	-3 → -5	Score → -3	-3 → Score	Score → -5	Score → Score
Total												
1986-1988	.126	.176	.034	.697	.054	.901	.121	.074	.085	.804	.064	.852
1988-1990	.285	.252	.049	.463	.095	.854	.056	.112	.045	.792	.098	.856
1990-1992	.297	.141	.046	.563	.054	.899	.063	.076	.035	.861	.058	.908
1992-1994	.338	.208	.039	.454	.043	.918	.063	.094	.049	.844	.058	.893
1994-1996	.332	.313	.058	.356	.069	.874	.091	.152	.062	.758	.085	.853
Non-Hispanic White												
1986-1988	.167[1]	.111[1]	.032	.722[1]	.026	.938	.102[1]	.000[1]	.067	.897[1]	.039	.894
1988-1990	.268	.286	.060	.446	.085	.854	.036	.085	.034	.878	.097	.869
1990-1992	.323	.086	.037	.591	.050	.902	.096	.019	.024	.885	.051	.925
1992-1994	.356	.178	.040	.455	.038	.922	.047[1]	.093[1]	.044	.860[1]	.052	.904
1994-1996	.324	.343	.048	.324	.070	.880	.061	.232	.042	.707	.082	.876
Black												
1986-1988	.047[1]	.116[1]	.032	.837[1]	.054	.914	.158[1]	.053[1]	.093	.789[1]	.057	.849
1988-1990	.069[1]	.276[1]	.032	.655[1]	.102	.867	.075	.215	.054	.710	.095	.850
1990-1992	.189[1]	.324[1]	.062	.486[1]	.065	.873	.048	.127	.052	.825	.072	.876
1992-1994	.200	.169	.039	.631	.036	.925	.066	.082	.055	.852	.045	.901
1994-1996	.255	.309	.065	.436	.059	.875	.141	.070	.086	.789	.083	.828
Hispanic												
1986-1988	.175	.300	.043	.525	.100	.857	.100[1]	.200[1]	.096	.700[1]	.113	.791
1988-1990	.474	.184	.060	.342	.101	.839	.049	.131	.049	.820	.106	.845
1990-1992	.323	.113	.039	.565	.045	.916	.047[1]	.070[1]	.028	.884[1]	.048	.923
1992-1994	.452	.290	.039	.258	.060	.900	.083[1]	.125[1]	.050	.792[1]	.088	.862
1994-1996	.438	.250	.067	.313	.078	.855	.067[1]	.133[1]	.068	.800[1]	.093	.838

NOTE: -3 = Interview Completed but Child Not Tested; -5 = child Not Interviewed; 'Score' = Child Received Score

[1] = Denominator < 50 and > 25

Table 5. Two-Year Transition Probabilities to and from PIAT Mathematics by Age

	-3 → -3	-3 → -5	Score → -3	-3 → Score	Score → -5	Score → Score
Ages 5-6						
1986 → 1988	.153	.153	.026	.694	.051	.923
1988 → 1990	.320	.170	.044	.510	.076	.880
1990 → 1992	.290	.116	.045	.594	.045	.910
1992 → 1994	.319	.181	.038	.500	.037	.925
1994 → 1996	.444	.254	.065	.302	.071	.866
Ages 7-8						
1986 → 1988	.108[1]	.243[1]	.033	.649[1]	.059	.908
1988 → 1990	.282[1]	.410[1]	.054	.308[1]	.101	.845
1990 → 1992	.303	.152	.043	.545	.061	.895
1992 → 1994	.387	.186	.031	.427	.044	.925
1994 → 1996	.282	.324	.047	.394	.065	.888
Ages 9-10						
1986 → 1988	-----	-----	.060	-----	.053	.887
1988 → 1990	.226[1]	.195[1]	.050	.581[1]	.122	.829
1990 → 1992	.298	.158	.051	.544	.058	.890
1992 → 1994	.304	.261	.050	.435	.047	.906
1994 → 1996	.284	.351	.060	.365	.069	.871

NOTES: See Table 4. No probabilities indicated where cell size is less than 25.

Table 6. Two-Year Transition Probabilities to and from Behavior Problems by Age

	-3 → -3	-3 → -5	Score → -3	-3 → Score	Score → -5	Score → Score
Ages 4-6						
1986 → 1988	.082	.066	.081	.852	.058	.861
1988 → 1990	.044	.139	.044	.817	.075	.881
1990 → 1992	.080	.060	.033	.860	.045	.922
1992 → 1994	-----	-----	.043	.897[1]	.055	.902
1994 → 1996	.068	.178	.069	.753	078	.853
Ages 7-9						
1986 → 1988	.147[1]	.059[1]	.089	.794[1]	.074	.827
1988 → 1990	.056	.144	.044	.800	.114	.842
1990 → 1992	.082	.082	.042	.836	.063	.895
1992 → 1994	.056	.056	.055	.888	.056	.889
1994 → 1996	.143	.100	.056	.757	.084	.860
Ages 10-11						
1986 → 1988	-----	-----	.096	-----	.064	.840
1988 → 1990	.089	.200	.053	.711	.136	.811
1990 → 1992	.000[1]	.086[1]	.024	.914[1]	.100	.876
1992 → 1994	.111[1]	.133[1]	.049	.756[1]	.068	.883
1994 → 1996	.055	.182	.062	.763	.097	.841

NOTE: See Table 4. No probabilities indicated where cell size is less than 25.

Table 7. Logistic Regression Showing Differences in Risks between Being Scored and (1) Not Being Interviewed, (2) Being Interviewed but Not Scored and (3) Either Not Being Interviewed or Scored In T+2 for Children Who Received a Score in Year T. Odds Ratios.

PIAT Mathematics scores in 1986 through 1996

Base Year Characteristics	(1) Score to Non-Interview (-5)					(2) Score to No Score (-3)					(3) Score to Non-Interview or Non-Score (-5 or -3)				
	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996
Male vs. Female	1.43[d]	0.96	1.19	1.30[d]	0.99	1.03	1.49[b]	1.15	1.28	1.16	1.26	1.12	1.18[d]	1.29[b]	1.06
Had Sibling vs. None	0.76	0.28[a]	0.72[d]	0.50[a]	0.69[c]	0.98	0.79	0.82	0.68[d]	0.78	0.86	0.37[a]	0.77[d]	0.58[a]	0.72[b]
8-10 Years of Age [1]	1.08	1.31[c]	0.73[c]	0.99	0.99	1.44	1.40[c]	0.99	1.42[c]	0.85	1.21	1.35[b]	0.83[d]	1.17	0.93
11 and Over Years of Age [1]	2.24[a]	2.40[a]	1.59[a]	1.48[c]	1.07	3.22[a]	1.68[b]	2.18[a]	1.80[b]	0.75	2.53[a]	2.24[a]	1.82[a]	1.62[a]	0.92
Hispanic [2]	3.30[a]	1.14	0.98	1.48[c]	1.19	1.29	0.95	0.98	1.09	1.72[a]	2.23[a]	1.06	0.98	1.29[d]	1.41[b]
Black [2]	1.89[c]	1.19	1.75[a]	0.85	0.86	1.00	0.60[b]	1.40[c]	0.95	1.47[b]	1.41	0.93	1.61[a]	0.90	1.09
Mom Had 12 Years Schooling [3]	1.82	1.39[d]	1.27	0.90	1.44[b]	0.67	0.95	0.91	1.00	0.97	1.15	1.20	1.09	0.95	1.19
Mom Has <12 Years of Schooling [3]	1.76	2.82[a]	1.82[a]	1.30	1.54[b]	0.94	1.69[b]	0.82	1.19	0.72[d]	1.28	2.31[a]	1.30[c]	1.25	1.11
Child in Bottom 3rd on Test [4]	2.04[c]	1.13	1.11	1.45[d]	1.67[a]	0.60	1.07	1.29	1.00	1.05	1.07	1.12	1.18	1.21	1.35[b]
Child in Middle 3rd on Test [4]	2.50[b]	1.27	1.12	1.49[c]	1.32[d]	0.59[d]	1.70[b]	1.26	0.98	0.96	1.22	1.38[b]	1.18	1.21	1.14
Urban Residence	2.08[c]	1.06	0.83	1.12	1.45[c]	2.01[d]	0.91	1.22	1.00	0.83	2.04[b]	1.01	0.95	1.06	1.12
Model X²	41.32[a]	166.99[a]	54.09[a]	34.39[a]	28.64[a]	16.71[d]	35.76[a]	30.05[a]	12.67	13.41	38.37[a]	152.00[a]	66.46[a]	37.18[a]	22.39[b]
N	1479	2433	2843	3016	3065	1448	2274	2782	3000	3017	1535	2564	3003	3151	3245

Notes: 1–Under 8 is reference Group   2–Non-Hispanic/Non-Black Reference Group   3–Mom has >12 Yrs School is Reference Group   4–Child in Top 1/3 on Test is Reference Group

a – Significant at p<.01   b – Significant at p<.05   c – significant at p<.10   d – significant at p<.15

Table 8. Logistic Regression Showing Differences in Risks between Being Scored (1) Not Being Interviewed, (2) Being Interviewed but Not Scored, and (3) Either Not Being Interviewed or Scored in T+2 for Children Who Received a Score in Year T. Odds Ratios.

PIAT Reading Recognition in 1986 through 1996

Base Year Characteristics	(1) Score to Non-Interview					(2) Score to No Score					(3) Score to Non-Interview or Non-Score				
	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996
Male vs. Female	1.25	0.96	1.25[d]	1.25	0.97	1.24	1.72[a]	1.10	1.25	1.19	1.24	1.19[d]	1.20[d]	1.26[c]	1.06
Had Sibling vs. None	0.82	0.27[a]	0.73[d]	0.51[b]	0.67[b]	0.99	0.71[d]	0.86	0.65[c]	0.77	0.90	0.35[a]	0.79[d]	0.57[a]	0.71[b]
8-10 Years of Age [1]	1.05	1.32[c]	0.70[b]	0.92	0.97	1.61[d]	1.40[c]	0.97	1.46[c]	0.78[d]	1.27	1.37[b]	0.81[c]	1.13	0.88
11 and Over Years of Age [1]	2.22[b]	2.48[a]	1.58[b]	1.35	1.05	2.40[c]	1.24	2.07[a]	1.66[b]	0.72[d]	2.23[b]	2.09[a]	1.79[a]	1.48[b]	0.89
Hispanic [2]	3.21[a]	1.17	0.88	1.60[b]	1.24	0.84	1.01	1.00	1.05	1.68[b]	1.82[b]	1.10	0.94	1.32[c]	1.43[a]
Black [2]	1.74[d]	1.21	1.72[a]	0.95	0.91	0.86	0.62[b]	1.49[b]	0.96	1.52[b]	1.22	0.92	1.63[a]	0.94	1.14
Mom Had 12 Years Schooling [3]	2.48[c]	1.36	1.22	0.97	1.44[b]	0.60	1.12	1.01	0.97	1.02	1.31	1.26	1.13	0.96	1.22[d]
Mom Has < 12 Years of Schooling [3]	2.23[d]	2.80[a]	1.69[a]	1.37	1.52[b]	1.29	1.87[b]	0.77	1.21	0.71[d]	1.63[d]	2.37[a]	1.22	1.29[d]	1.09
Child in Bottom 3rd on Test [4]	1.34	0.95	1.36[c]	1.09	1.59[b]	0.96	1.21	1.24	1.24	1.43[c]	1.16	1.07	1.30[c]	1.15	1.51[a]
Child in Middle 3rd on Test [4]	1.43	1.06	1.15	0.69[c]	1.32[d]	1.12	1.31	1.21	1.28	0.82	1.29	1.16	1.18	0.92	1.07
Urban Residence	2.21[c]	1.06	0.87	1.10	1.46[c]	1.78	0.91	1.47[c]	1.02	0.81	2.00[b]	1.00	1.05	1.05	1.10
Model X²	33.30[a]	174.59[a]	59.81[a]	34.75[a]	28.30[a]	12.84	35.60[a]	32.49[a]	13.32	24.06[b]	30.34[a]	151.92[a]	70.17[a]	36.54[a]	30.10[a]
N	1475	2402	2781	2963	3045	1451	2258	2729	2941	3005	1529	2548	2951	3092	3233

Notes: 1–Under 8 is Reference Group   2–Non-Hispanic/Non-Black Reference Group   3–Mom has >12 Yrs Schooling is Reference Group   4–Child in Top 1/3 on Test is Reference Group

a – Significant at p<.01   b – Significant at p<.05   c – significant at p<.10   d – significant at p<.15

Table 9. Logistic Regression Showing Differences in Risks between Being Scored and (1) Not Being Interviewed, (2) Being Interviewed But Not Scored and (3) Either Not Being Interviewed or Scored in T+2 for Children Scored in Year T. Odds Ratios.

Behavior Problems Index Scores in 1986 through 1996

Base Year Characteristics	(1) Score to Non-Interview					(2) Score to No Score					(3) Score to Non-Interview or Non-Score				
	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996	1986 to 1988	1988 to 1990	1990 to 1992	1992 to 1994	1994 to 1996
Male vs. Female	1.23	0.99	1.28[c]	1.40[b]	1.14	1.15	0.78	1.02	0.93	1.00	1.19	0.92	1.19[d]	1.16	1.08
Had Sibling vs. None	0.80	0.22[a]	0.87	0.49[a]	0.66[b]	1.32	0.79	0.73	1.31	0.88	1.05	0.31[a]	0.82	0.71[b]	0.75[b]
8-10 Years of Age [1]	1.04	1.26[d]	0.91	1.00	1.13	1.17	1.32	1.18	1.00	0.90	1.12	1.29[b]	1.00	1.00	1.02
11 and Over Years of Age [1]	2.32[b]	2.67[a]	1.79[a]	1.54[b]	1.37[b]	1.09	1.13	1.17	1.27	1.06	1.62[c]	2.17[a]	1.60[a]	1.42[b]	1.22[d]
Hispanic [2]	2.63[a]	1.08	0.96	1.57[a]	1.26[d]	1.60[b]	1.37	1.13	1.03	1.62[b]	2.03[a]	1.15	1.01	1.31[b]	1.38[a]
Black [2]	1.46[d]	1.04	1.73[a]	0.84	1.04	1.48[b]	1.51[c]	2.20[a]	1.21	2.16[a]	1.46[b]	1.16	1.87[a]	1.01	1.42[a]
Mom Had 12 Years Schooling [3]	1.96[b]	1.39[d]	1.25	0.88	1.55[a]	1.18	0.86	1.47[d]	1.06	0.90	1.42[c]	1.16	1.32[c]	0.96	1.23[c]
Mom Has <12 Years of Schooling [3]	2.17[b]	2.88[a]	1.75[a]	1.42[b]	1.50[b]	1.13	1.21	1.70[b]	1.26	0.98	1.46[c]	2.17[a]	1.73[a]	1.34[b]	1.25[c]
Child in Bottom 3rd on Test [4]	1.53[d]	1.02	1.16	1.66[a]	1.53[a]	2.03[a]	1.30	1.59[c]	0.98	1.09	1.79[a]	1.10	1.30[c]	1.30[c]	1.33[b]
Child in Middle 3rd on Test [4]	1.35[d]	1.01	1.22	1.53[a]	1.32[b]	1.64[a]	1.33	1.18	0.78	1.26[d]	1.51[a]	1.09	1.21[c]	1.13	1.29[b]
Urban Residence	2.07[b]	1.11	0.91	1.12	1.18	0.89	1.38	0.93	1.92[a]	1.37[d]	1.18	1.19	0.92	1.42[b]	1.25[c]
Model X²	48.08[a]	230.53[a]	56.09[a]	64.36[a]	32.59[a]	21.54[b]	16.80[d]	25.98[a]	17.35[a]	33.14[a]	44.38[a]	182.06[a]	67.95[a]	42.15[a]	37.36[a]
N	1863	2754	3391	3567	3480	1904	3564	3249	3520	3394	2035	2884	3512	3755	3714

Notes: 1–Under 8 is Reference Group   2–Non-Hispanic/Non-Black Reference Group   3–Mom has >12 Yrs Schooling is Reference Group   4–Child in Top 1/3 on Test is Reference Group

a – Significant at p<.01   b – Significant at p<.05   c – significant at p<.10   d – significant at p<.15