Creating the Survey Measures of Mother-Child Relations
for Middle Childhood

Carrie L. Mariner, Martha J. Zaslow, Julie A. Floryan,
and Christopher Botsko

Child Trends, Inc.

Methods Working Paper # 98.9

This working paper is a record of psychometric analyses and decisions, beginning with twelve a priori measures, and leading up to the creation of a final set of nine recommended measures, the "Survey Measures of Mother-Child Relations for Middle Childhood." First, the process used to build from a priori measures to final measures is discussed. Second, the a priori measures are listed, and results of psychometric analyses with each are discussed, along with decisions about specific items omitted or added, and any rescaling of response categories. Finally, the nine recommended measures are reviewed. The full set of Survey Measures of Mother-Child Relations for Middle Childhood is included in Appendix 98.9A.

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Methods Working Paper # 98.9

Steps in Psychometric Analyses and Criteria for Acceptance of a Measure

In Methods Working Paper # 98.8 we described the goals and methodology of the pilot study used to examine twelve *a priori* measures of mother-child relations. In the present working paper we describe the psychometric analyses used to assess and then revise the *a prior* measures. We also describe the final set of nine recommended measures.

We established a set of criteria and decision rules for the assessment of the measures. The following procedures were followed: (1) Cronbach's alphas were computed for each *a priori* measure, both for the full sample and among racial/ethnic and neighborhood subgroups. A cutoff of .60 for the full sample and at least 5 of the 6 subgroups was considered adequate. (2) Items from each *a priori* measure were submitted to principal axis factoring. If the items all loaded on only one factor, or if they all had loadings of at least .30 on the first factor, they were considered to measure a single concept. (3) Any items which failed either of the first two tests were deleted from the measure, and alphas and factor analyses were recalculated. (4) A 65 item factor analysis, using items from all the *a priori* measures except those from the Discipline measure, was run. The results were used to suggest alternative groupings of items, and to provide a basis for reaching decisions about *a priori* measures with marginal results from alphas and single-measure factor analyses. (5) In some cases, response options were rescaled, in order to correct for skewed distributions or to ensure a common range across items in a measure. (6) Final scores were calculated for each measure using the mean of the individual items, for respondents with 25% or fewer of the individual items missing.

<div align="center">**Psychometric Analyses of *A Priori* Measures**</div>

Below, we list the items of each of the twelve *a priori* measures and detail the psychometric analyses and final recommendations for each measure. Items with numbering beginning "R" are interviewer ratings, while all others are maternal report items. The numbering noted for each item makes it possible to locate it in the instrument itself (the interview in both English and Spanish is included in Appendix 98.8B).

Warmth

Items on *A Priori* Measure.

About how many times in the past month did you:

E 1a 1. Hug or show physical affection to (Child)?

E 1c 2. Tell (him/her) you love (him/her)?

D1f 3. Spend time with (Child) doing one of (his/her) favorite activities?

E 1e 4. Talk with (him/her) about things (he/she) is especially interested in?

E 1f 5. Tell (Child) you appreciated something (he/she) did?

R 4 6. *Did mother spontaneously praise the child for (his/her) behavior, helpfulness, looks or other positive qualities?*

R 6 7. Did mother's voice convey positive feelings about the child?

R 7 8. Did mother show physical affection when interacting with the child?

Psychometric Analyses. The eight "Warmth" items all loaded onto a single factor and held together with an alpha in the full sample of .73. The 65 item factor analysis, however, revealed that items E1e and D1f separated from the remaining six warmth items onto another factor which included all of the items from the "Household Activities" measure and all six of the mother-report items from "Child Centered Interaction." These two items were thus dropped from the "Warmth" measure. The remaining items still loaded onto a single factor and held together well with an overall alpha of .68. The measure was renamed "Expression of Affection" to more accurately reflect the meaning of the remaining items.

_____The final step for this measure was to adjust individual variable scoring so the entire measure could be set on a single range. All six items were rescaled to a 1 to 3 range. Items E1a, E1c, and E1f originally ranged from 1-5.

Due to high skew on each of these variables, "never in the past month" (1), "less than once a week" (2), and "about once a week" (3) were collapsed and were recoded to equal 1; "several times a week" (4) was recoded 2; and "every day" (5) was recoded 3. Interviewer rating items R4 and R7 were originally on a 0-2 scale. A value of one was added to each category so they would numerically match other items. Finally, item R6 was originally a dichotomous item. This variable was rescaled so that "voice did not convey positive feeling" (2) equaled 1 and "voice conveyed positive feeling" (1) equaled 3. The overall alpha after rescaling was .66 with all items loading onto a single factor. Mean scores were calculated for respondents with valid responses on at least five of the six items.

Recommendation for Final Measure. The measure "Expression of Affection" has six items, and a range of one to three. Items and response categories are listed in Appendix 98.9A.

Listening

Items on *A Priori* Measure.

How often is it true that:

K 1a   1. When (Child) looks upset, you try to get (him/her) to talk about it.

K 1b   4. You ask (him/her) not to express opinions that you disagree with.

K 1c   3. You look at the expression on (his/her) face to get a sense of how (he/she) is doing or feeling.

K 1d   1. You ask (Child) to wait if you are busy and (he/she) wants to tell you something.

K 1e   5. You let (him/her) ask you as many questions as (he/she) wants about things (he/she) doesn't understand.

R 8   6. Did mother encourage the child to contribute to the conversation?

Psychometric Analyses. The six items originally intended to comprise the "Listening" measure were analyzed. The full-sample alpha was .28 and items loaded onto two separate factors (items k1b and k1d loaded separately). Due to their factor loadings, items k1b and k1d were dropped from the measure. When the remaining four variables were analyzed, the resulting full-sample alpha level was .40, with no subgroup alpha over .55. Factor analysis produced a single factor.

The three mother-rated items from the original "Listening" measure which hung together most strongly in factor analysis were examined for content. The project team decided that these items did not reflect passive

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listening as much as eliciting information from the child and allowing the child to express him or herself. With this new construct in mind, items which had been dropped from the original "Warmth" measure were added into the new "Eliciting" measure. These 2 items, dlf and ele, seemed to capture how the mother encouraged the child to express him or herself, and thus fit in with the concept of eliciting. Analyses of these 5 items showed a full-sample alpha of .56 (subgroup alphas were also just below .60) with all items loading onto a single factor.

No recoding of these items was necessary since all were scored on a 1-5 response scale. Mean scores were calculated for all respondents with valid answers to at least 4 of the 5 items.

Recommendation for Final Measure. The measure "Eliciting" has five items, and a range of one to five. Items and response categories are listed in Appendix 98.9A.

Discipline Hypotheticals

Items on *A Priori* Measure.

L1   1. Imagine that you ask (Child) to clean up a mess (he/she) made or something (he/she) spilled, and (he/she) doesn't do it. Which of the things on the card would you do? You can choose as many as apply.

L2   2. Imagine that after you ask (him/her) repeatedly (Child) still doesn't clean up the mess or spill. Which of the things on the card would you do? You can choose as many as apply.

L3   3. Which of the things on the card would you do if (Child) hit a playmate for no reason?

L4   4. Which of the things on the card would you do if later in the same day (Child) hit a playmate for no reason again?

L5   5. Which of the things on the card would you do if (Child) lied to you about something important?

L6   6. Which of the things on the card would you do if later in the same day (Child) lied to you about something important again?

L7   7. Which of the things on the card would you do if (Child) said, "I hate you" or swore during a temper tantrum?

Scoring of response categories. This measure differed from previously used measures of discipline, in that it attempted to capture multiple styles of responding to misbehavior and response to repeat misbehavior. The 14 original response categories are listed here, with their categories after recoding:

a. Ignore it or do nothing => not used

b. Let another adult handle it => not used

c. Spank => Harsh Punishment

d. Hit hard => Harsh Punishment

e. Talk with child about the behavior => Reasoning

f. Make child feel guilty => not used

g. Make child apologize =>Reasoning

h. Make child do something to correct the situation =>Reasoning

I. Send child away to be alone => Punishment-Not Harsh

j. Take away a privilege, such as TV or allowance => Punishment-Not Harsh

k. Limit where child can go or who child can be with => Punishment-Not Harsh

l. Scold or yell at child => Harsh Punishment

m. Threaten child => Harsh Punishment

n. Make child do some extra work => Punishment-Not Harsh

The original 14 categories were recoded into 3 more general theoretical categories, Harsh Punishment (1), Punishment-Not Harsh (2), and Reasoning (3). Since mothers could have chosen responses from more than one of these categories, a hierarchy was created. Harsh Punishment was scored whenever it occurred. Punishment-Not Harsh was scored when it occurred in the absence of Harsh Punishment, and Reasoning was scored only when it occurred in the absence of both Harsh and Not Harsh Punishment. Thus, a mother who reported both "g", make the child apologize, and "n", make the child do extra work, would be scored "2" (Punishment-Not Harsh), since this score overrides the Reasoning score. Due to the nature of the scoring system, the measure was renamed "Most Reasoning Discipline Response".

Psychometric Analyses. We decided to drop the single item (L7) which, while asked in parallel format to the other six, did not have a matching item which repeated the misbehavior (see items L1 and L2, for example). The remaining 6 items had an alpha of .68 in the full sample. When submitted to factor analysis, the items loaded on one factor, with loadings ranging from .49 to .71.

Recommendation for Final Measure. The measure "Reasoning Discipline" has six items, and a range of one to three. Items and response categories are listed in Appendix 98.9A.

Mother School Interface

Items on *A Priori* Measure.

How often in the past 12 months have you, yourself:

B 3a   1. Had a meeting with a teacher about a problem with how (Child) was doing with schoolwork?

B 3b   2. Had a meeting with a teacher or someone from (Child)'s school about any discipline or behavior problems (he/she) was having?

B 3c   3. Had a meeting with one of (his/her) teachers when there was no problem?

B 3d   4. Attended a school event or performance put on by (Child)'s school?

B 3e   5. Observed activities in (Child)'s classroom?

B 3f   6. Volunteered your time for (his/her) school?

D 1n   7. How many times in the past month did you supervise or help (Child) with things (he/she) was learning in school?

Psychometric Analyses. The overall alpha of the *a priori* seven-item measure was .60, considered borderline for acceptance. Items also broke into two factors, with B3a and B3b forming their own factor. These two items were then dropped. The remaining items, which reflect more positive, pro-active school involvement resulted in an overall alpha of .68 with all subgroups scoring above the .60 cut-off. All five items also loaded onto a single factor.

Some recoding was required for all items to have the same 1-4 range. Items B3c, B3d, B3e, and B3f are scored on their original scale of "never in the past 12 months" (1), "1 or 2 times" (2), "3 to 5 times" (3), and "6 or more times" (4). The final item (D1n) was originally scaled from 1-5. After being reverse-coded, the two lowest categories "never in the past month" and "less than once a week" were collapsed and now equal 1, "about once a week" now equals 2, "several times a week" now equals 3, and "every day" now equals 4. Total scores were calculated using the mean of responses for individual items. The overall alpha of the rescaled five-item measure was .67, and item loadings ranged from .36 to .76, with one factor.

Recommendation for Final Measure. The measure "Mother-School Interface" consists of five items

scored on a 1 to 4 scale. Items and response categories are listed in Appendix 98.9A.

Exposure to the Outside World

Items on *A Priori* Measure.

About how often in the past 12 months have you:

A 1a   1. Taken (Child) to any type of museum, historical site or zoo?

A 1c   2. Taken (him/her) <u>with you</u> to a religious service?

A 1e   3. Taken (him/her) with you to visit your friends or relatives?

A 1g   4. Taken (him/her) to a musical or theatrical performance?

A 1h   5. Discussed news or current events with (him/her)?

R 2   6. Did mother introduce the interviewer by name?

R 3   7. Did mother explain anything to the child about the interview?

Psychometric Analyses. Four attempts were made to reconfigure this measure, but all four failed.

Initially, all *a priori* items were analyzed. The resulting alpha for the full sample was .32 with items loading onto

three separate factors. Next, the first five variables were recoded to be dichotomous (the two interviewer ratings

were already dichotomous) such that "never in the past 12 months" was scored 0 and the remaining categories

(having done the activity at all in the past 12 months) was scored 1. The full sample alpha was still low (.44) with

items still loading onto three separate factors.

At this point, variable response frequencies were considered. Items A1c, A1e, and A1h were higher

frequency items than A1a and A1g. Thus, A1c, A1e, and A1h were recoded to be dichotomous, so "never in the

past 12 months" and "less than once a month" were scored 0 and "about once a month," "several times a month,"

and "once a week or more" were scored 1. The two interviewer items were dropped since they cleanly broke off in

the factor analysis. This revised measure's overall alpha was .40 and items loaded onto two separate factors. One

final attempt was made when item R3 was added back into the measure. Although all items now loaded onto a

single factor (although four items out of the six only loaded within the .30-.40 level), the overall alpha was only .35.

Recommendation for Final Measure. This measure was dropped, due to low alphas.

<u>Household Activities</u>

Items on *A Priori* Measure.

About how many times in the past month did you:

D 1c   Wash or fold clothes together?

D 1g   Do dishes together?

D 1b   Go to the store together?

D 1i   Clean the house together?

D 1k   Build or repair something together?

D 1m   Prepare food together?

Psychometric Analyses. All six "Household Activities" variables loaded onto a single factor and the full-sample alpha was .73. No recoding was needed because all items were on a 1-5 scale. Mean scores were calculated for respondents with valid responses for at least 5 of the 6 items.

Recommendation for Final Measure. Based on the full 65 item factor analysis, it was determined that Joint Activities, a combination of items from Household Activities and Child-Centered Interaction, would be used instead, and this measure was dropped. See Child-Centered Interaction below for a more complete explanation.

<u>Child-Centered Interaction</u>

Items on *A Priori* Measure.

About how many times in the past month did you:

D 1a   1. Look at books or read stories with (Child)?

D 1d   2. Work or play on a computer or play video games with (Child)?

D 1e   3. Play a board game or card game or do puzzles with (Child)?

D 1h   4. Do arts and crafts together?

D 1j   5. Play sports or outdoor activities or games together?

D 1l   6. Play pretend games like dolls, house or cowboys with (Child)?

R 5   7. Did mother converse with the child, excluding scolding or suspicious comments?

R 9   8. Did mother answer the child's questions or requests verbally?   (Coded no if no requests)

Psychometric Analyses. All eight items originally intended for the "Child Centered Interaction" measure were analyzed for consistency. Analyses yielded a full-sample alpha of .67 with items loading onto two factors (interviewer items R5 and R9 separated from the remaining variables).

However, the 65-item exploratory factor analysis revealed one factor which grouped all maternal-report items from the "Child Centered Interaction" measure and all items from the "Household Activities" measure together. This factor, which we called "Joint Activities," drew from these two *a priori* measures and was tested as a more parsimonious alternative to the two measures. Because of the large number of items in the pool which loaded onto this factor, we decided to choose seven which provided a balance between items more frequent among girls (some household activities were especially unequal between the genders) and items more frequent among boys (like repairing or building). Analyses were rerun including only six items (D1b, D1e, D1h, D1j, D1k, D1m).

The full-sample alpha for the remaining six items is .71 with all items loading onto one factor. Total scores were calculated using the mean of responses for individual measure items.

Recommendation for Final Measure. The measure "Joint Activities" has six items which range from one to five. Items and response categories are listed in Appendix 98.9A.

<u>Provision of Stimulating Materials</u>

Items on *A Priori* Measure.

We'd like to know about things you now have in your home that (Child) is actually allowed to use. Do you have in your home:

G 1a   1. <u>Art supplies</u> like scissors, paints, glue or clay (Child) is allowed to use?

G 1b   2. A <u>VCR</u> or <u>video games</u> (Child) is allowed to use?

G 1c   3. A <u>dictionary, atlas</u> or <u>encyclopedia</u> (he/she) is allowed to use?

G 1d   4. A <u>computer</u> (Child) is allowed to use?

G 1e △5. A <u>musical instrument</u>, including a toy instrument, (he/she) is allowed to use?

G 1f   6. A <u>CD player, stereo,</u> or <u>tape player</u> (he/she) is allowed to use?

G 2   7. About how many books does your (Child) have?

Psychometric Analyses. First, item G2 was rescored 0 if the child had less than 10 books and 1 if the

child had 10 or more books. Analyses of the seven items resulted in a full-sample alpha of .51 with items loading on two factors.

When the factor patterns were examined, it was apparent that items G1c, G1d, and G2 consistently segregated from the remaining items. Theoretical constructs were revised on the basis of the factor analysis, splitting the "Provision of Stimulating Materials" measure into two subscales. The first (G1c, G1d, and G2) joined to create the "Textual Items" subscale, while G1a, G1e, G1b, and G1f formed the "Non-textual Items" subscale. Although both of these subscales' items loaded onto a single factor, each had an overall alpha of .45, which is well below the .60 cut-off.

After some discussion, it was agreed upon by the project team that the original version of the measure would be retained. Due to the content of the measure, high intercorrelations were not expected between individual items. The team felt that "Stimulating Materials" could function as an important predictor when used as an index, or a sum of the number of items, rather than as a scale with strong psychometric properties such as a high alpha. Mean scores were calculated for respondents with valid responses on at least 6 of the 7 items, so that total scores ranged from 0 to 1, reflecting the proportion of the 7 items available to the child.

Recommendation for Final Measure. The measure "Provision of Stimulating Materials" has seven items and ranges from 0 to 1. Items and response categories are listed in Appendix 98.9A.

Expectations of Responsibility

Items on *A Priori* Measure.[2]

How often is (Child) expected to...

H 1   1. Make the bed (he/she) sleeps in?

H 2   2. Pick up after (himself/herself)?

H 3   3. Clean up after (his/her) own spills?

H 4   4. Clean the room (he/she) sleeps in?

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[2] In the pretest, we asked mothers not only how often the child is expected to do each of these activities, but also "At what age did you begin to expect (Child) to do this?" We hoped to develop a measure of average age at which the child was expected to assume responsibility for these daily tasks. However, the interviewers for the pretest reported that these further items were difficult for mothers to answer and time consuming. These items were dropped after the pretest, and not included in the pilot study.

H 5   5. Take a bath or shower on (his/her) own?

H 6   6. Watch or supervise younger siblings who live in the house when you are busy in another room?

Psychometric Analyses. Item H6 was immediately dropped from analysis of the "Expectations of Responsibility" measure due to the large number of respondents (n=71) who did not have younger children in the house for the target child to watch. The remaining five *a priori* items were analyzed yielding an overall alpha of .75 with all items loading onto a single factor. Subgroup alphas were also above the .60 cut-off.

Since all items for the "Expectations of Responsibility" measure were originally scored on a 1-5 range, no recoding was needed. Total scores were calculated using the mean of responses for individual measure items.

Recommendation for Final Measure. The final measure consists of five items scored on a 1 to 5 range. Items and response categories are listed in Appendix 98.9A. It should be noted that all of the items in this measure come from the HOME-SF (as can be seen in Appendix 98.9A, which notes each of the items used in the set of recommended measures that derive from the HOME-SF). At the same time, the scoring differs from that on the HOME-SF, in which these items do not form the basis of a separate measure.

Decision Making

Items on *A Priori* Measure.

In general, who decides...

I 1   1. What time (Child) goes to bed?

I 2   2. What time (he/she) does homework?

I 3   3. What clothes (he/she) can wear (outside of school)?

I 4   4. Who (Child) can play with?

I 5   5. How much TV (he/she) can watch?

I 6   6. Which TV programs (he/she) can watch?

Psychometric Analyses. Although the overall alpha for the *a priori* "Decision Making" measure was above the .60 cut-off (alpha=.68) and all items loaded onto a single factor, one sub-group fell substantially below the alpha cut-off. African-Americans had an alpha of .53. Even more problematic was the fact that African-Americans from middle-income neighborhoods had an alpha of only .22.

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In an attempt to diminish the disparity between the alpha of the middle-income African-American subgroup and other alphas, items were scored on a 1 to 3 scale where "child alone" (1) remained equal to 1; "mostly child" (2), "child and parent together" (3), and "mostly parent" (4) now equal to 2; and "parent alone" (5) now equal to 3. With these cut-offs, the extremes of allowing the child to make decisions completely independently (1) and not allowing any input from the child when making decisions (3) retain independence while the three middle categories collapse to reflect collaboration between parent and child (2). This effort resulted in an overall alpha of .74 and pulled all subgroups above the .60 cut-off except the middle-income African-American subgroup (alpha=.41). Two more attempts were made to recode the items so all subgroups would achieve alphas nearer .60.

The second attempt at rescaling the measure differed from the first in that "mostly parent" was moved from category 2 to category 3. This scoring system resulted in an overall alpha of .61 (a substantial drop from the previous alpha), did not change the African-American from middle income neighborhoods subgroup alpha (.41), and caused three other subgroups to drop below the .60 alpha cut-off.

A final coding attempt rescaled items to be dichotomous. It was believed that the categories of "mostly parent" and "parent alone" should remain together as an indicator of strong parental control. Thus, these two categories combined to be scored a 1 while the remaining three categories "child alone," "mostly child," and "child and parent together" were collapsed and given a value of 0. This scoring was unsuccessful, dropping the overall alpha to .56 and leaving only 4 sub-groups above the .60 alpha cut-off.

Recommendation for Final Measure. Finally, it was decided to drop this measure, since the meaning of the measure was questionable among African-Americans from middle income neighborhoods.

Monitoring

Items on *A Priori* Measure.

Different children need different amounts of supervision. Please tell me how often you know things like the following. How often do you know:

J 1a   1. Who (Child) is with when (he/she) is away from home (and not in school)?

J 1b   2. When to expect (Child) home when (he/she) is away from home (and not in school)?

J 1c   3. Where (Child) is when (he/she) is away from home (and not in school)?

J 1d   4. If (he/she) arrived back home when (he/she) was supposed to?

J 1e   5. How much TV (he/she) watches?

J 1f   6. Which TV programs (he/she) watches?

J 1g   7. What (his/her) homework assignments are?

Psychometric Analyses. The seven *a priori* "Monitoring" items were analyzed, yielding a full sample alpha of .73 with items breaking up into two factors (J1e, J1f and J1g loaded separately). Although the alphas were strong for both full-sample and subgroups, all items were severely skewed towards "always" knowing.

Item responses were recoded to account for the skew such that "almost never," "sometimes," and "often" were given a value of 0 and "almost always" and "always" were given a value of 1. This dichotomous measure resulted in a full-sample alpha of .67 with all items loading onto a single factor. However, Mexican Americans living in middle income neighborhoods and White Americans living in middle income neighborhoods did not have any responses 0 responses.

A final decision was made to correct for the extreme skew of the responses. This time, the dichotomous measure was created such that the first four response categories equal 0 and "always" equals 1. This break allowed all groups to exhibit a full range of responses. The overall alpha for this coding is .74 with all subgroup alphas above .65. All items also load onto a single factor. Composite measure scores were calculated using the mean of responses for individual measure items.

Description of Final Measure. The final "Monitoring" measure has six items, and ranges from zero to one. Items and response categories are listed in Appendix 98.9A.

Racial/Ethnic Socialization

Items on *A Priori* Measure.

(Note alternate wording for Mexican-American mothers on items M1, M2 and M3.)

How often in the past 12 months have you:

A 1d   1. Talked with (him/her) about how to get along with people whose background is different, for example, because their race is different or they come from a different country?

A 1f   2. And (Child) attended a special event having to do with the history or traditions of your racial or ethnic

group?

A 1i   3. Talked with (Child) about the history or traditions of (his/her) racial or ethnic group?

M 1   4. Does (Child) have any books, dolls, music, or toys that help (him/her) learn more about (his/her) (race,

          nationality or ethnic background/Mexican origin)?

M 7   5. How many times have you talked with (Child) about what to do if (he/she) experiences or witnesses

          racial or ethnic prejudice or discrimination?

How much do you agree or disagree with the following statements?

M 2   6. It is important for (Child) to play with children (of different races, nationalities or ethnic

          backgrounds/who are not of Mexican or Latin-American origin).

M 3   7. It is important for (Child) to know the contributions (different races, nationalities, and ethnic

          groups/both people who are and are not of Mexican origin) have made to this country.

Psychometric Analyses. The seven *a priori* "Racial/Ethnic Socialization" items yielded a full-sample alpha of .60 (subgroups alphas marginal) and loaded onto a single factor. In an attempt to clarify the meaning of the measure, items M2 and M3 were dropped. These items were dropped because they represented attitudes, while the other items measured behavior, and because they had the weakest factor loadings. When rerun with only five items, the "Racial/Ethnic Socialization" measure had an overall alpha of .61 with all items loading onto a single factor. Subgroup alphas increased slightly as well, with the lowest alpha for a subgroup at .56.

The final alteration to the measure was recoding items M1 and M7 so all variables would be scored on the same 1-5 range. Item M1 was originally a dichotomous item. Recodes were made such that "no" or "don't know/ not sure" now equals 2 and "yes" now equals 4. Item M7 was originally a 1-4 variable. Due to the skew of responses, the four categories were first collapsed into three categories and then the three categories were scored as one, three, and five. Thus, "never" was recoded to 1, "a few times"was recoded to 3, and "four to ten times" and "more than ten times" were recoded to 5. The overall alpha for the recoded measure is .59, and all items load on one factor. Total scores were calculated using the mean of responses for individual measure items.

Recommendation for Final Measure. The final "Racial/Ethnic Socialization" measure has five items, and ranges from one to five. Items and response categories are listed in Appendix 98.9A.

Recommended Measures: Dyadic and Managerial

The psychometric analyses resulted in a winnowing from 12 *a priori* measures to 9 recommended measures. It is important to note that the new measures build from the HOME-Short Form (our starting point for the current measures development), and include selected items from the HOME-Short Form. Scoring of response options, however, generally differs from the scoring of the HOME-Short Form. One measure, Expectations of Responsibility, is constructed completely from HOME-Short Form items, but is recommended as a distinct measure to allow researchers interested in this concept to separate it from the overall home environment rating.

The nine recommended measures fall into two groupings, dyadic and managerial. The first grouping, dyadic measures, includes Expression of Affection, Eliciting, Reasoning Discipline, and Joint Activities. Each of these focuses on interaction between the mother and child. The second grouping, managerial measures, includes Monitoring, Mother-School Interface, Provision of Stimulating Materials, Racial/ Ethnic Socialization, and Expectations of Responsibility. These measures focus on guidance and structuring provided by the mother. The measures, their constituent items, and response categories are provided in Appendix 98.9A.

Appendix 98.9A

Survey Measures of the Mother-Child Relationship for Middle Childhood

**Carrie L. Mariner, Martha J. Zaslow, Christopher Botsko, Barbara Sugland,
Kristin A. Moore, Marjorie Lindner Gunnoe, Julie A. Floryan,
Kathryn Tout, and Tamara Halle**

This appendix contains the measures and response categories created and recommended by the Methods Research Team after conducting the pilot test of the a priori measures described in Methods Working Paper # 98.9. Cross references are included to the HOME-SF for overlapping items, and to the questionnaire used in the Survey of Mothers and Children.

Dyadic Measures

Expression of Affection

        This scale measures the frequency with which the mother expresses affection to the child, using both maternal report and interviewer ratings. The three maternal report items ask the mothers about expressing affection physically and verbally, as well as stating appreciation for the child. The interviewers report on the occurrence of spontaneous praise, positive feelings in the mother's voice, and physical affection during the interview. The six items, each with a range from one to three, are averaged to create the total score. In the pilot sample of 304 families, the factor loadings range from .48 to .78, when all items are forced onto one factor, and the Cronbach's alpha is .66. About how many times in the past month did you:

E 1a   1. Hug or show physical affection to (Child)?
E 1c   2. Tell (him/her) you love (him/her)?
E 1f   3. Tell (Child) you appreciated something (he/she) did?

       1=NEVER IN THE PAST MONTH
       1=LESS THAN ONCE A WEEK
       1=ABOUT ONCE A WEEK
       2=SEVERAL TIMES A WEEK
       3=EVERY DAY

R 4   4. Did mother spontaneously praise the child for (his/her) behavior, helpfulness, looks or other positive qualities?

       1=DID NOT OBSERVE PRAISE
       2=OBSERVED 1 INSTANCE OF PRAISE
       3=OBSERVED 2 OR MORE INSTANCES OF PRAISE

R 6 △   5. Did mother's voice convey positive feelings about the child?

       1=VOICE DID NOT CONVEY POSITIVE FEELING
       3=VOICE CONVEYED POSITIVE FEELING

R 7   6. Did mother show physical affection when interacting with the child?

       1=DID NOT OBSERVE ANY PHYSICAL AFFECTION
       2=OBSERVED 1 INSTANCE OF PHYSICAL AFFECTION
       3=OBSERVED 2 OR MORE INSTANCES OF PHYSICAL AFFECTION

Eliciting

        This scale measures the frequency with which mothers encourage communication from their children and engage in those activities which their children prefer. All items are maternal report, and they include asking the child to explain when he/she is upset, checking the child's facial expression, allowing the child to ask questions, engaging in the child's favorite activities, and talking about the child's interests. The five items, ranging from one to five, are averaged to create the total score. In the pilot sample of 304 families, factor loadings range from .52 to .66 on the first factor, and Cronbach's alpha is .56.

How often is it true that:
K 1a   1. When (Child) looks upset, you try to get (him/her) to talk about it.
K 1c   2. You look at the expression on (his/her) face to get a sense of how (he/she) is doing or feeling.
K 1e   3. You let (him/her) ask you as many questions as (he/she) wants about things (he/she) doesn't understand.

       1=ALMOST NEVER
       2=SOMETIMES

3=OFTEN
4=ALMOST ALWAYS
5=ALWAYS

About how many times in the past month did you:

D 1f   4. Spend time with (Child) doing one of (his/her) favorite activities?

E 1e   5. Talk with (him/her) about things (he/she) is especially interested in?

       1=NEVER IN THE PAST MONTH
       2=LESS THAN ONCE A WEEK
       3=ABOUT ONCE A WEEK
       4=SEVERAL TIMES A WEEK
       5=EVERY DAY

Reasoning Discipline

This scale was created from mothers' responses to six hypothetical misbehaviors, which they could choose to respond to in as many as fourteen ways. These disciplinary responses were then grouped into three theoretically based categories, reasoning (talk about it, make child apologize, make child do something to correct the situation), moderate or not harsh punishment (time out, take away a privilege, ground, give extra work), and harsh punishment (spank, hit, scold or yell, threaten). For each of the six items, a score of three was assigned if the mother chose one or more of the reasoning strategies, and none of the punishments. A score of two was assigned if the mother chose one or more of the moderate punishments, and none of the harsh punishments. A score of one was assigned if the mother chose any of the harsh punishments. Scores across the six hypothetical situations were then averaged. Note that hypothetical situations ranged from minor to more serious misbehaviors. There were three situations (e.g., child did X, Y, Z) with each situation repeated (child did X again). This permits consideration of disciplinary strategy when misbehavior recurs and maternal patience may be taxed. In the pilot sample of 304 families, loadings on the first factor range from .49 to .71, and Cronbach's alpha is .68.

I'm going to read you different ways a child **might** misbehave. Please **imagine** that (Child) did each of these, and then tell me the letters next to all of the things listed you would do.

L 1   1. Imagine that you ask (Child) to clean up a mess (he/she) made or something (he/she) spilled, and (he/she) doesn't do it. Which of the things on the card would you do? You can choose as many as apply.

L 2   2. Imagine that after you ask (him/her) repeatedly, (Child) still doesn't clean up the mess or spill. Which of the things on the card would you do? You can choose as many as apply.

L 3   3. Which of the things on the card would you do if (Child) hit a playmate for no reason?

L 4   4. Which of the things on the card would you do if later in the same day (Child) hit a playmate for no reason again?

L 5   5. Which of the things on the card would you do if (Child) lied to you about something important?

L 6   6. Which of the things on the card would you do if later in the same day (Child) lied to you about something important again?

(IGNORE IT OR DO NOTHING)
(LET ANOTHER ADULT HANDLE IT)
1=SPANK
1=HIT HARD
3=TALK WITH CHILD ABOUT THE BEHAVIOR
(MAKE CHILD FEEL GUILTY)
3=MAKE CHILD APOLOGIZE
3=MAKE CHILD DO SOMETHING TO CORRECT THE SITUATION
2=SEND CHILD AWAY TO BE ALONE
2=TAKE AWAY A PRIVILEGE, SUCH AS TV OR ALLOWANCE
2=LIMIT WHERE CHILD CAN GO OR WHO CHILD CAN BE WITH
1=SCOLD OR YELL AT CHILD
1=THREATEN CHILD
2=MAKE CHILD DO SOME EXTRA WORK

NOTE: Since multiple options can be chosen, scoring is hierarchical. Code 3 is overridden by 2 or 1, and code 2 is overridden by 1.

Joint Activities

All six items on this scale are based on maternal report, and measure the frequency of shared mother-child activities. Items include going to the store, engaging in building or repairing activities, preparing food, doing arts and crafts, playing outdoors, and playing games or puzzles. All items require both mother and child to participate in the activity. We note that the focus here is on mutual engagement in potentially stimulating activities rather than on the possession or use of stimulating materials (which are considered in a separate scale, below). Furthermore, the activities focused upon here do not require extensive or costly possessions in order for mother and child to participate in them. The six items range from one to five, and are averaged to create a total score. In the pilot sample of 304 families, all items load on one factor, with loadings ranging from .51 to .75, with a Cronbach's alpha of .71.

About how many times in the past month did you:

D 1b   1. Go to the store together?
D 1e   2. Play a board game or card game or do puzzles with (Child)?
D 1h   3. Do arts and crafts with (Child)?
D 1j   4. Play sports or do outdoor activities or games together?
D 1k   5. Build or repair something together?
D 1m   6. Prepare food together?

       1=NEVER IN THE PAST MONTH
       2=LESS THAN ONCE A WEEK
       3=ABOUT ONCE A WEEK
       4=SEVERAL TIMES A WEEK
       5=EVERY DAY

Mother-School Interface

This scale is the mean of five items measuring the mother's involvement in the child's schooling. Items include meeting with the teacher when the child is not having a problem, attending school events, observing the class, volunteering at school, and helping the child with schoolwork. The choice of items was intended to cover school involvement apart from reactions to problems at school. Scores on the five items range from 1 (not in the past 12 months) to 4 (6 or more times in the past 12 months), and the five items are averaged to produce a total score. In the pilot sample of 304 families, the items load on one factor, with loadings from .36 to .76, and Cronbach's alpha is .68.

How often in the past 12 months have you, yourself:

B 3c   1. Had a meeting with one of (his/her) teachers when there was no problem?
B 3d   2. Attended a school event or performance put on by (Child)'s school?
B 3e   3. Observed activities in (Child)'s classroom?
B 3f   4. Volunteered your time for (his/her) school?

        1=NEVER IN THE PAST 12 MONTHS
        2=1 OR 2 TIMES
        3=3 TO 5 TIMES
        4=6 OR MORE TIMES

D 1n   5. How many times in the past month did you supervise or help (Child) with things (he/she) was learning in school?

        1=NEVER IN THE PAST MONTH
        1=LESS THAN ONCE OR TWICE IN THE PAST MONTH
        2=ABOUT ONCE A WEEK
        3=SEVERAL TIMES A WEEK
        4=EVERY DAY

Provision of Stimulating Materials

This measure is an index of how many cognitively stimulating materials the child has access to in the home and is actually allowed to use or operate. The seven items ask if the family has, and the child is allowed to use, the following: a dictionary, atlas or encyclopedia; a computer; at least ten children's books; art supplies; a musical instrument; a VCR or video games; and a CD, stereo or tape player. The index ranges from zero to one, representing the proportion of these seven items available to the child. In factor analysis using the pilot sample of 304 families, the items do not load together, splitting instead into two factors. Because it is not necessarily expected that possession and access to one of these items should be closely related to possession and use of others, we include this as a recommended measure despite a Cronbach's alpha of .51, with the aim of assessing total number and access to such materials.

We'd like to know about things you now have in your home that (Child) is actually allowed to use. Do you have your home:

G 1a   1. Art supplies like scissors, paints, glue or clay (Child) is allowed to use?

G 1b   2. A VCR or video games (Child) is allowed to use?

G 1c   3. A dictionary, atlas or encyclopedia (he/she) is allowed to use?

G 1d   4. A computer (Child) is allowed to use?

G 1e △5. A musical instrument, including a toy instrument, (he/she) is allowed to use?

G 1f   6. A CD player, stereo, or tape player (he/she) is allowed to use?

        0=NO
        1=YES

G 2 △ 7. About how many books does (Child) have?

        0=NONE
        0=1 OR 2
        0=3 TO 9
        1=10 OR MORE

Expectations of Responsibility

These five questions ask mothers to report how often they expect their children to perform certain routine household responsibilities. Topics include making the bed, picking up after self, cleaning up own spills, cleaning own room, and bathing self. Responses ranged from almost never (1) to always (5). The scale score reflects the average score on the five items. In the pilot sample of 304 families, all items load on one factor, with loadings ranging from .38 to .97, and Cronbach's alpha is .75.

As can be seen from the notations indicating that items derive from the HOME-SF, this measure is comprised entirely of items derived from the HOME-SF. Yet we also note that in the HOME-SF these items do not form the basis of a separate measure. Instead, scores for these items are collapsed and incorporated into a larger subscale.

Now I'd like to ask about things that mothers may or may not expect their children to do on their own. How often is (Child) expected to...

H 1 ⌂ 1. Make the bed (he/she) sleeps in?
H 2 ⌂ 2. Pick up after (himself/herself)?
H 3 ⌂ 3. Clean up after (his/her) own spills?
H 4 ⌂ 4. Clean the room (he/she) sleeps in?
H 5 ⌂ 5. Take a bath or shower on (his/her) own?

       1=ALMOST NEVER
       2=SOMETIMES
       3=OFTEN
       4=ALMOST ALWAYS
       5=ALWAYS

Monitoring

This measure consists of seven items concerning how much the mother knows about her child's activities. Topics covered include the child's whereabouts, companions, time of return after being away from home, homework, and television viewing. Responses range from almost never knowing about these things (1) to always knowing (5). However, frequencies are highly skewed, with mothers responding at the high end. As a result, the response categories are recoded so as to be dichotomous, with a score of one (1) indicating always knowing, and all other responses being scored as zero (0). When forced onto one factor, the seven items have factor loadings ranging from .39 to .71 in the pilot sample of 304 families, and Cronbach's alpha is .74.

Different children need different amounts of supervision. Please tell me how often you know things like the following. How often do you know:

J 1a	1.	Who (Child) is with when (he/she) is away from home (and not in school)?
J 1b	2.	When to expect (Child) home when (he/she) is away from home (and not in school)?
J 1c	3.	Where (Child) is when (he/she) is away from home (and not in school)?
J 1d	4.	If (he/she) arrived back home when (he/she) was supposed to?
J 1e	5.	How much TV (he/she) watches?
J 1f	6.	Which TV programs (he/she) watches?

If (Child) is in school:

J 1g	7.	What (his/her) homework assignments are?

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0=ALMOST NEVER
0=SOMETIMES
0=OFTEN
0=ALMOST ALWAYS
1=ALWAYS
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Racial/ Ethnic Socialization

This scale consists of five items, including discussions about one's own race/ethnicity, discussions about others' race/ethnicity, discussions about discrimination, celebrations focusing on own race/ethnicity, and having toys related to own race/ethnicity. The items were phrased in such a way that they were appropriate for minority as well as non-minority families, and indeed there was little missing data from any of the racial/ethnic subgroups. The five items were scored from one to five (one dichotomous item is actually scored two and four), and a total score was calculated by averaging the five items. In the pilot sample of 304 families, factor loadings on the first factor range from .48 to .78, and Cronbach's alpha is .61.

How often in the past 12 months have you...

A 1d   1. Talked with (him/her) about how to get along with people whose background is different, for example, because their race is different or they come from a different country?

A 1f   2. And (Child) attended a special event having to do with the history or traditions of your racial or ethnic group?

A 1i   3. Talked with (Child) about the history or traditions of (his/her) racial or ethnic group?

        1=NEVER IN THE PAST 12 MONTH
        2=LESS THAN ONCE A MONTH
        3=ABOUT ONCE A MONTH
        4=SEVERAL TIMES A MONTH
        5=ONCE A WEEK OR MORE

M 1   4. Does (Child) have any books, dolls, music, or toys that help (him/her) learn more about (his/her) (race, nationality or ethnic background/Mexican origin)?

        4=YES   Note alternate wording to be used for Mexican-
        2=NO   American mothers.
        2=DON'T KNOW/NOT SURE

M 7   5. How many times have you talked with (Child) about what to do if (he/she) experiences or witnesses racial or ethnic prejudice or discrimination?

        1=NEVER
        3=A FEW TIMES
        5=4 TO 10 TIMES
        5=MORE THAN 10 TIMES