

## Online Supplemental Materials

### Extended Description of Measures

#### Maternal sensitivity.

#### **Ainsworth et al.'s (1978) Sensitivity versus Insensitivity Scale**

- 1 - Completely inattentive and insensitive to baby's state and baby's eating. May force feeding with inappropriate actions, completely unresponsive to obvious cues.
- 2 - Shows no sensitivity to baby's state and eating, but not actively insensitive, mildly inappropriate actions
- 3 - While aware of baby's state, mother disregards cues and continues her mildly inappropriate actions
- 4 - Mother is slightly insensitive with variable attention and shows general insensitivity
- 5 - Intermittent accommodation and sensitivity to baby's needs
- 6 - Mother is generally sensitive though some few moments of slightly insensitive behavior may be seen
- 7 - Mother is sensitive to the baby and usually reacts with accommodating responses
- 8 - Sensitive to baby's states and needs; almost always accommodating or responsive to baby's cues and needs
- 9 - Sensitive to baby's states and needs at all times, always responsive and attentive

#### **30 and 72 Month Emotional and Verbal Responsivity Scale (HOME; Bradley & Caldwell, 1984)**

1. Mom spontaneously vocalizes to child at least twice during visit (excluding scolding).  
Yes/No
2. Mother responds to child's vocalizations with a vocal or verbal response. Yes/No

3. Mother tells child the name of some object during visit or says name of person or object in a “teaching” style. Yes/No
4. Mother’s speech is distinct, clear, and audible to interviewer. Yes/No
5. Mother initiates verbal interchanges with observer – asks questions, makes spontaneous comments. Yes/No
6. Mother expresses ideas freely and easily and uses statements of appropriate length for conversation (e.g., gives more than brief answers). Yes/No
7. Mother spontaneously praises child’s qualities or behavior twice during visit. Yes/No
8. When speaking of or to child, mother’s voice conveys positive feeling. Yes/No
9. Mother caresses or kisses the child at least once during visit. Yes/No
10. Mother shows some positive emotional responses to praise of child offered by visitor.  
Yes/No

**24 and 42 Month and 13 year 7-point Supportive Presence Scale**

- 1** - Mother completely fails to be supportive to the child, either being aloof and unavailable or being hostile toward the child when the child shows need of some support.
- 2** - Mother provides very little emotional support to the child. Whatever supportive presence she does display is minimal and not timed well, either being given when the child does not really need it, or only after the child has become upset.
- 3** - Mother gives some support, but it is sporadic and poorly timed to the child's needs. The consistency of this support is uneven so as to make the mother unreliable as a supportive presence.
- 4** - This mother does a respectable job of being available when her child needs support. She may lean closer as the child shows small signs of frustration and praise the child's efforts

to show that she is available and supportive, but inconsistency in this style makes her support unreliable or unavailable at crucial times in the session.

- 5 - Mother provides good support, reassurance and confidence in the child's ability, but she falters in this at times when the child especially could use more support. Or, mother is universally supportive, but gives no evidence of modulation to the child's needs.
- 6 - Mother establishes herself as supportive and encouraging toward the child and continues to provide support when the child needs it. As the child experiences more difficulty, her support increases in commensurate fashion. She has some lapses, however, in which the child's performance waivers for lack of support. Yet, she redoubles her support and attempts to return the child to a level of confidence that is more optimal.
- 7 - Mother skillfully provides support throughout the session. She sets up the situation from the beginning as one in which she is confident of the child's efforts. She may reject inadequate solutions to problems in a way that does not reduce her support and confidence in the child's ability to get the correct solution. If the child is having difficulty, she finds ways to structure the problem to reward some sort of success by the child and encourage whatever solution the child can make. Mother not only is emotionally supportive but continuously reinforces the child's success.

**Secure base script knowledge.**  $AAI_{sbs}$  (T. E. A. Waters & Roisman, 2019; H. S. Waters & E. Waters, 2006) was coded on the 9-point scale listed below:

- 9 - Several positive scenes that have clear secure base script organization. Positive secure base expectations also present. Positive generic scenes and fragments may also be present.

**8** - At least one positive scene that has clear secure base structure plus several additional positive scenes fragments/generic scenes with partial or implied secure base script structure and supported by multiple clear secure base related expectations.

**7** - One clear positive example of a secure base scene, with a few scene fragments or generic secure base scenes. Also, evidence of several secure base expectations.

**6** - Several secure base scene fragments or generic scenes which suggest secure base script structure/organization of expectations. Perhaps not enough on their own, but credited as positive secure base in light of elaborated secure base related expectations in the transcript.

**5** - One generic secure base scene, or scene fragment with explicit or implicit secure base script organization. Secure base conceptualization of the relationship is inferred from multiple examples of clear positive secure base expectations.

**4** - No clear positive scenes with explicit or implicit secure base script organization. Some positive secure base expectations with little the specifics or elaboration needed to be confident of their secure base relevance. Possible negative secure base expectations as well (a mixed bag), but positive expectations outweigh negative.

**3** - No clear positive scenes with explicit or implicit secure base script organization. Several negative secure base expectations. Possibly some positive secure base expectations as well (mixed bag), but negative expectations outweigh positive. Narrative may tend to be event focused or focused on instrumental elements of the relationship and supportive care.

**2** - Clear examples of one or more scenes that present clear opportunities for secure base resolution, but which does not occur (bids for help not recognized by parent; secure base

script failures); several instances of expectations not consistent with secure base script (e.g. expectation of rejection, dismissal of child's needs); or several secure base inconsistent fragments/generic scenes

**1 - Relationship** viewed through lens of scripts that lack or are inconsistent with secure base script organization. Clear evidence of alternative scripts and no positive evidence of secure base expectations/scenes. E.g., scenes and expectations suggest that the interviewee conceptualizes relationship to parents as one in which they were primarily focused on instrumental aspects of “good parenting”, or that child and mother were partners victimized by the fathers unpredictable outbursts.

**Relationship effectiveness.**

**5 - Very Good Engagement**

- Relationship(s) characterized by mutual deep caring.
- All of the qualities of a positive relationship are obvious: mutual caring, trust, and emotional closeness; willingness to sacrifice self-interests; sensitivity to one another's needs and wishes; sharing of experience; enjoyment of each other; loyalty, honesty, and faithfulness.
- Relationship(s) may contribute to a positive sense of self, high self-esteem, and self-respect.
- There is evidence that positive emotional experiences are shared by both parties in the relationship(s).
- Relationship(s) are not necessarily perfect; nonetheless disagreements, when present, are resolved to the mutual satisfaction of both parties and lead to a strengthening of the relationship(s).

- Participant shows reflection about their relationship and considerable understanding.

#### **4 - Good Engagement**

- The relationship(s) involve caring on the part of both parties.
- Most of the qualities of positive relationship are present (i.e., mutual caring, trust, and emotional closeness; willingness to sacrifice self-interests; sensitivity to one another's needs and wishes, sharing of experience, enjoyment of each other; loyalty, honesty, fidelity, and faithfulness); however, some isolated positive feature may be insufficiently present, or some isolated concern may arise as one listens to the interview.
- Relationship(s) may contribute to a positive sense of self, high self-esteem, and self-respect.
- Both parties share positive emotional experiences in the relationship.
- Disagreements may be present, and more often than not appear to be resolved to the mutual satisfaction of both parties.
- Participant clearly is reflective about their relationship(s), but also shows some obvious lack of understanding.

#### **3 - Average Engagement**

- Able to form and maintain relationship(s) for more than a short time (e.g., > 6 months)
- Relationship(s) involve caring, but there may be a lack of depth.

- Compared to higher scores, positive features are somewhat diminished, or occasional negative features are more clear. Certain positive qualities may be lacking.
- If negative features are present, these remain overbalanced by positive qualities.
- Relationship(s) may contribute to a positive sense of self, self-esteem, and self-respect, but they do not contribute to a negative sense of self, low self-esteem, or self-derogation.
- Disagreements are present and may be resolved, but resolution is not always mutually satisfying.
- Recounts relationship characteristics, but doesn't show deep reflection about them.

## **2 - Fair Engagement**

- Poor track record in terms of being able to maintain relationship(s)
- It is unclear whether the participants' relationship(s) involve caring on the part of the participant, or some degree of caring is evident but appears to be limited.
- Some positive features may be present in the participant's relationship(s); however, the negative features somewhat outweigh the positive.
- Relationship(s) may contribute to a negative sense of self, low self-esteem, or self-derogation.
- May have had little experience in relationships, but speaks positively about those s/he has had.
- One or two instances of violence might have occurred, but so far have not recurred. Constructive efforts to address the problem may be evident.

## 1 – Low Engagement

- The coder may question whether the participant is able to maintain relationship(s), or the relationship is exploitative, hurtful, and/or destructive to one or both parties. Recurring violent incidents may be present.
- Very few positive features are present in relationship(s). Negative features are clearly evident, e.g., lack of trust or mutual caring, selfishness, insensitivity to one another's needs and wishes, unfaithfulness, disrespect, active rejection, controlling behaviors. (Note: not all negative features need to be present, but negative features clearly characterize this relationship.)
- Relationship(s) contribute to a negative sense of self, low self-esteem, and self-derogation for one or both parties.
- Participant may be emotionally distant in the relationship or may experience mostly negative emotions.
- Chronic or intense conflict may be present in the relationship(s).
- In rare instances, some participants are completely unable to start and maintain romantic relationships.

**Maternal depressive symptoms.** Mothers completed the self-report Center for Epidemiologic Studies - Depression Scale (CES-D; Randloff, 1977) when the participants were

0 – Less than one day per week	1 – 1-2 days per week	2 – 3-4 days per week	3 – 5-7 days per week
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48 months old. The scale with exact items can be viewed below:

1. I was bothered by things that don't usually bother me



2. I did not feel like eating; my appetite was poor
3. I felt that I could not shake off the blues even with the help from my family or friends
4. I felt that I was just as good as other people
5. I had trouble keeping my mind on what I was doing
6. I felt depressed
7. I felt that everything I did was an effort
8. I felt hopeful about the future
9. I thought my life had been a failure
10. I felt fearful
11. My sleep was restless
12. I was happy
13. I talked less than usual
14. I felt lonely
15. People were unfriendly
16. I enjoyed life
17. I had crying spells
18. I felt sad
19. I felt that people disliked me
20. I could not get “going”

**Early life stress.** To view an interactive version of the Life Events Schedule (Cochrane & Robertson, 1973; Egeland, Breitenbucher, & Rosenberg, 1980), please visit <https://esy-shiny-apps.shinyapps.io/MLSRA-Life-Events-Tool/>

The Life Events Schedule was coded by trained coders using the following coding scale:

0 – No disruption

1 – Some disruption

2 – Much disruption

3 – Highly disruptive

The life events participants were asked to report on were as follows:

1. Unemployment
2. Job changes in last year
3. Trouble with welfare
4. Trouble with bosses or continued tension at work
5. Moved during the past 12 months
6. Purchasing own home
7. Quarrel with neighbors
8. Income decreased substantially
9. Getting into debt you cannot repay
10. Money problems
11. Arguments about how money is spent
12. You/immediate family member arrested/convicted of any violations
13. Jail sentence of you or immediate family member (includes workhouse)
14. You/immediate family member involved in physical fight
15. Immediate family member drinking heavily
16. Immediate family member attempts suicide
17. Death of immediate family member\*/or close friend
18. Immediate family member seriously ill

19. Partner drunk or high frequently
20. Less time for social life
21. Period of homelessness (no permanent residence) where stayed during this period
22. You, your child, or partner hospitalized for a serious physical illness or injury
23. Prolonged ill health of you, your child, or partner requiring treatment by a doctor
24. Miscarriage (participant or partner)
25. Abortion (you or partner)
26. Pregnancy (you or partner)
27. Marriage (of participant)
28. New family member (immediate), through birth or marriage
29. Partner (s) moves out → Partner (s) moves in Participant moves out Participant moves in
30. Other people moving in/out
31. Increase in number of arguments or severe arguments with partner (severe enough to have affected the relationship)
32. Have you ever been frightened by your partner or other family members?
33. Increase in number of arguments/severe fights with close friend (severe enough to have affected the relationship)
34. You or someone in immediate family has been a victim of crime
35. Trouble with relatives (e.g., in-laws)
36. Marital separation or break-up (includes on-going relationship with partner)
37. Divorce
38. Marital reconciliation

- 39. Custody, visitation problems
- 40. Child care problems
- 41. Separation of participant and child

**Covariates.** These covariates follow the standard protocol of those used traditionally in the MLSRA and are reported in the main text.

### Example R Code

Below is an example of the R code used to analyze the path analysis shown in the main text Figure 1. Further code and information about these analyses can be acquired by contacting the corresponding author.

Key for terms in code below:

- “sbsk.agg” represents the aggregated secure base script scores at ages 19 and 23.
- “ms.fluc” represents the maternal sensitivity fluctuations score assessed by calculating the within-person standard deviation of the standardized score for maternal sensitivity across 7 time points from 3 months through 13 years.
- “ms.mean” represents the maternal sensitivity mean score assessed by aggregating the average standardized score for maternal sensitivity across 7 time points from 3 months through 13 years.
- “rel.engagement.effectiveness32yo” represents the relationship effectiveness code at age 32.
- “covariates” represents maternal depression, life stress, and the demographic covariates included in the model as specified in the main text.

pacman::p\_load(lavaan) # for running SEM model shown below

mod1 <- '

```

# Regression equations
sbsk.agg ~ a*ms.fluc + b*ms.mean

rel.engagement.effectiveness32yo ~ c*sbsk.agg + d*ms.fluc + e*ms.mean

# Predictor variances
ms.fluc ~~ ms.fluc

sbsk.agg ~~ sbsk.agg

ms.mean ~~ ms.mean

# Covariances
ms.fluc ~~ cx*ms.mean

# Covariates
ms.fluc ~ covariates

ms.mean ~ covariates

sbsk.agg ~ covariates

rel.engagement.effectiveness32yo ~ covariates

# Indirect effects
indirect.ms.fluc := a*c

indirect.ms.mean := b*c

# Total effects
total.eff.ms.fluc := d + (a*c)

total.eff.ms.mean := e + (b*c)

,

# Estimate the model
mod1.est <- sem(mod1, data = data, se = "bootstrap", bootstrap = 50000)

```

```
# Examine the model.
```

```
summary(mod1.est, fit.measures = TRUE, standardized = TRUE)
```

## References

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- Bradley, R. H., & Caldwell, B. M. (1984). The HOME Inventory and family demographics. *Developmental Psychology*, 20(2), 315-320. <https://doi.org/10.1037/0012-1649.20.2.315>
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