

Studying the next generations:
the case for following the offspring of
MCS and Next Steps, and for studies
of grandparenting

By Emla Fitzsimons¹ and Marc H. Bornstein²
June 2019

With acknowledgements to
Alissa Goodman
Morag Henderson
Lisa Calderwood

¹ Centre for Longitudinal Studies, University College London

² US National Institute of Child Health and Human Development, and Institute for Fiscal Studies, London.

Contents

SUMMARY	3
1. INTRODUCTION	4
2. SCIENTIFIC CASE	4
2.1 Previous offspring studies.....	7
3. MILLENNIUM COHORT STUDY AND NEXT STEPS OFFSPRING	8
4. STUDY DESIGN	9
5. MEASUREMENT	11
6. SAMPLE REPRESENTATIVENESS	13
7. SCIENTIFIC CASE FOR STUDIES OF GRANDPARENTING	16
8. CONCLUSIONS AND RECOMMENDATIONS	17
9. TABLES	19

Summary

- Following the offspring of MCS and Next Steps cohort members would provide the unique potential to address a range of important and highly policy relevant scientific questions relating to child development and family well-being among new generations of children being born.
- Births to the cohorts over around the next three decades will be dispersed both in terms of their timing and geography, which leads to important new considerations in relation to study design and measurement. We believe that extensive use of major recent advances in technology to collect data, including remote recordings of child-mother interactions and remote interviews, is key to implementing the offspring studies.
- There are important considerations around which offspring to follow, when to follow them and what developmental domains to measure. We recommend that this is carefully scoped and tested next, but that the below criteria are adhered to:
 - a. all offspring of female cohort members are followed,
 - b. they are followed at the same ages as MCS cohort members, using a combination of the same measures as administered to the MCS cohort members, and new measures that have been developed since (and set out in this report),
 - c. two developmental waves are added over and above (b) – prenatally (using maternal report and/or record linkages), and at a point between age 9 months and 3 years, and
 - d. a wide range of administrative data linkages is obtained for the offspring, including from the wealth of health records available from the prenatal and postnatal period.
- Following the offspring of male study members is more challenging and more careful scoping would be required to determine the feasibility of this.
- The scientific justification for following grandchildren of NCDS and BCS70 mirrors that of offspring, allowing for even deeper investigation into the roots of family background and the drivers of transmission across generations. Considerations around design and measurement are also equally relevant. We recommend that the approach to grandchildren studies is hypothesis-driven.

1. Introduction

This report sets out the scientific merits, design and practical considerations for a longitudinal follow-up of offspring of existing cohorts. The discussion relates to the Millennium Cohort Study (MCS) and Next Steps, whom we recognise are at different stages of their reproductive lives and have differing constellations of data from their childhoods. Nonetheless, the issues pertaining to science, policy and study design are broadly similar and so we discuss them as one and only distinguish between the cohorts where relevant. The report also discusses the grandchildren of the BCS70 and NCDS cohorts.

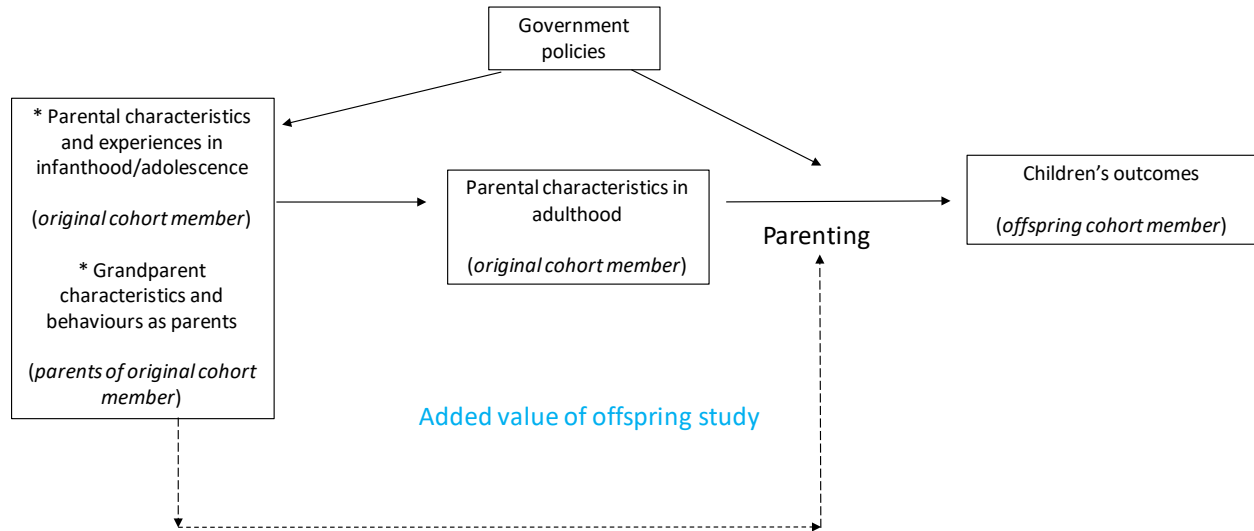
2. Scientific Case

Family background is the most important predictor of children's outcomes in all major spheres of life, including in cognitive, emotional and behavioural development and physical health, and later on, in education and labour market outcomes (Capaldi et al. (2019), Bjorklund and Salvanes (2011)). Children from disadvantaged backgrounds have the odds stacked against them from the earliest stages of life – and indeed potentially long before birth. Deficits between rich and poor in these domains open up early, tend to persist and to widen over time (Case et al. (2002), Condliffe and Link (2008); Goodman and Greg (2010)), and many disadvantaged children fail to reach their full developmental potential. Almost one in every three children in the UK today is growing up in poverty, with the numbers forecast to rise over the foreseeable future (Hood and Waters (2017)). Designing effective policies to help achieve the best outcomes for children relies on understanding exactly how and why family background matters, and under which conditions people can maximise their potential. Children's pathways in life are strongly rooted in their pasts - but just how deep are the roots of family background?

Due to data limitations, almost all research on the influences of families on child development date focusses on circumstances occurring after children are born, or occasionally from pregnancy. This means that we know very little about how social, biological, and genetic factors combine, long before the birth of a child, to shape children's development and life chances.

Following the offspring of existing cohorts would enable us to capitalise on the wealth of prospective data already collected throughout the formative years of their parents (i.e. the original cohort member), providing an unprecedented opportunity to capture in depth the influences of parents' earlier lives and experiences on their offspring. It would also allow one to study how government policies shape the outcomes of offspring – including not just policies targeting families today, but also the long-term impact of policies that affected the parents of the offspring in their formative years. This is illustrated in Figure 1.

Figure 1



We set out three major policy relevant scientific areas that would be advanced in profound ways with offspring studies. The first concerns the study of **intergenerational transmissions**. Intergenerational mobility has been widely studied using income, education and social class, and there is strong evidence that they are highly correlated across generations. We have some ideas about the structural factors (e.g. educational attainment) which are responsible for the strong correlations (Liu and Zeng, 2009): but the extent to which they are driven by a complex interplay between parental attitudes, beliefs and behaviours, and their children's endowments (e.g. ability) - a relationship that is further compounded by external policy levers – is much less understood.

Evidence including from MCS, has started to show the importance of many facets of parenting for children, ranging from parenting styles, home learning environments, and parental beliefs about the efficacy of their investments (Kelly et al., 2011, Hernandez-Alava and Popli, 2017, Dearden et al, 2011). But understanding how parenting attributes and behaviours are formed, and passed from one generation to the next is a highly data intensive area of research - requiring detailed information across multiple generations - and lack of adequate data to date means we still know very little about it. Most previous studies are limited to using self-reported measures of parenting, which are subject to reporting biases, or are based on small and selective samples (Madden et al. (2015), Dixon et al., 2005). There is now an unprecedented opportunity to collect rich prospective data on the parenting styles of cohort members themselves, to add to the wealth of data already collected throughout their own childhoods. Combining this with uniquely rich information on the endowments of cohort members and their offspring – including objective cognitive measures and health, and (for some) rich genetic data - would be transformational. It would provide an unparalleled resource to study how complex

interactions between parenting and children's endowments combine, and how they are affected by policy, to ultimately drive intergenerational transmission in a range of areas, including economic outcomes (income, earnings, employment) and social class, health (physical and mental health, healthy behaviours), cognitive and non-cognitive skills, relationship quality and stability.

A second major area to which offspring studies would contribute is in understanding **allocations within families.** Parenting often involves the distribution of resources - time, attention, material, emotion - across multiple children. Studies of the cohorts' offspring would offer a unique opportunity to study how and why, despite sharing a common environment growing up, siblings' outcomes can differ greatly (Plomin and Daniels, 1987, Jensen and McHale, 2015). There is evidence that parents tend to concentrate resources on some children and not on others (Pitt et al., 1990). For instance, parents may reinforce differences across their children by allocating more resources to the 'better-endowed' (e.g. higher ability) child, or compensate to help achieve equitable outcomes across children (Becker and Tomes, 1976). An empirical study using the National Longitudinal Survey of Youth (NLSY) and the offspring finds evidence consistent with the 'reinforcing' model (Frijters et al., 2013). However the origins of parental investments and behaviours across siblings are not well known, though are undoubtedly strongly rooted in parents' own earlier experiences and upbringing – which are extensively measured in the cohorts. Such studies can help inform policy by identifying how inequality is shaped at home and how it affects people's long-term outcomes.

Following all children born to a mother would also facilitate studies of (horizontal) spillovers between siblings, which, as noted above are few. It would confer additional methodological benefits - comparing developmental, educational, health and other outcome measures between siblings would allow researchers to study within and between family effects to a much greater extent than is typically possible in small scale studies.

A third key reason for following the offspring is to study **how children affect parents' health and wellbeing.** throughout the whole of their lives from childhood and into adulthood, including eventually – as the offspring studies mature - as key agents in the long-term care of ageing parents (Friedman and Mare, 2014). This is a largely overlooked area of research, not least due to the paucity of empirical data needed to study it: it involves complex mechanisms and pathways over the lifetime, and is only possible using rich longitudinal data spanning generations. Children's influences on their parents have generally not been explored to the same extent as parents' influence on their children, yet the relationship is bidirectional, with children affecting their parents in a whole range of domains, including mental health, health and health-related behaviours (Kuczynski and De Mol, 2015); over the longer term, educational investments in children can, through raising their knowledge of health, their financial resources and social integration, have positive long-term spillovers for parents' health and health behaviours; spillovers can also be negative however, with well-educated offspring more likely to live farther away from parents (Machin et al., 2012), counteracting the benefits of children's living in close proximity for parents' health (Silverstein and Bengtson, 1991).

A recent scoping review highlights how little we know about this area. It assessed studies of downward spillover effects (from parents and/or grandparents to children), horizontal spillover

effects (between partners/spouses, between siblings) and upward spillover effects (from offspring to parents and/or grandparents), finding that the vast majority of studies (286 of 313) were on the former, with a further 22 assessing horizontal spillovers and just five assessing upward spillovers. In the few studies that do exist, there is evidence that they matter. Lundborg and Majlesi (2018) find, in Sweden, a causal effect of children's schooling on their parents' longevity - particularly daughter's on father's and those from low socio-economic backgrounds. There is evidence in the United States that the educational attainment of adult offspring is associated with parental survival, with part of the relationship being explained by health behaviours (Friedman and Mare, 2014).

While we have focussed primarily on social science applications of offspring studies, there is also rich biomedical potential to such studies, which would be further scoped at the next stage.

2.1 Previous offspring studies

Previous cohort studies have included offspring to varying degrees, and whilst a comprehensive review of them is beyond the scope of this work, we provide some examples here and recommend that a full review, including of their design and protocols, is undertaken at a future stage.

In the UK, the British Cohort Study (BCS70) and National Child Development Study (NCDS) both included direct assessments of children fixed at the ages of their cohort member parent (ages 34 and 33, respectively).³ In addition, both studies collected complete fertility histories from cohort members, and adult sweeps feature a relatively limited (to date) set of questions on each of the cohort members' children. The Avon Longitudinal Study of Parents and Children (ALSPAC), following a cohort born in Bristol in the early 1990s, has an extensive follow-up of cohort member's children - including direct assessments from early ages - though its scientific value and feasibility considerations are different from MCS, given its geographical focus. In Understanding Society, all members of the household over age 10 are interviewed, and parents are asked some questions for younger children.⁴

Internationally, the NLSY79, a US nationally representative sample of 12,500 individuals who were 14-21 years old in 1978, has followed the biological children of their female cohort members through the NLSY79 Child and Young Adult cohort, and direct measures have been collected from the children since age 4 (and maternal reports prior to then). The New Zealand Dunedin Study, following a cohort born in 1972/3, includes a study of Dunedin study members who are parenting a 3 year old (first-borns only); and a study of the 15-year-old teenagers whom study members are parenting.

³ <https://cls.ucl.ac.uk/cls-studies/1970-british-cohort-study/bcs70-age-34-sweep/>
<https://cls.ucl.ac.uk/cls-studies/1958-national-child-development-study/ncds-age-33-sweep/>

⁴ A report on births is being undertaken by Understanding Society in parallel to this report.

3. Millennium Cohort Study and Next Steps Offspring

The Millennium Cohort Study (MCS) follows around 19,000 individuals born in the UK in 2000-02. Since the initial birth survey at 9 months, the cohort has been followed up six times at ages 3, 5, 7, 11, 14 and 17. At the time of writing in the Summer 2019, MCS cohort members are turning 18 years of age. Next Steps follows the lives of around 16,000 individuals in England born in 1989/90. The study began when the cohort members were aged 14. Cohort members were surveyed annually until 2010, and the next sweep after this was when they were aged 25, in 2015-16. Planning is currently underway for the ninth sweep of Next Steps, at age 31/32.

A woman's reproductive years span from early adolescence through the early fifties, with the majority of births occurring through the twenties and thirties. The average age of first-time mothers in the UK was 28.8 years in 2017, with fertility rates peaking around the early thirties.⁵ This means that in the 2020s, participants in the MCS will begin procreating a new generation. The Next Steps cohort have already surpassed the average age of first birth; by age 25, the time of the last survey, around 25% had at least one child (33% of females, 20% of males). They will achieve peak fertility very soon, in their early thirties. There is now an unprecedented and time-sensitive opportunity to study the offspring of the cohort members. For MCS, the prospective study of offspring could feasibly start very early in the reproductive lives of the cohort members, whilst for Next Steps there would need to be an element of retrospective data capture for the sizeable proportion who have already had children.

The numbers of births we are likely to witness among the cohorts over the next three decades is shown in Table 1, with projections based on ONS fertility statistics as of 2017. The table shows clearly that the flow of births to the cohorts will occur over up to three decades, and offspring will be reaching key developmental ages at different times. At the peak of fertility, up to 450 offspring are likely to reach a particular developmental age in any given year.

Given the geographic reach of the studies, the flow of births to the cohort members will be dispersed across the country, and will be spread across up to three decades. The large dispersion in the occurrence of births is in stark contrast to traditional birth cohort studies, where the cohort ages in tandem and data design and collection revolve around concurrent ages. The age variation in the offspring cohort - moreover at scale - brings with it important challenges in relation to study design and data collection.

If, as we believe is scientifically desirable, the offspring study is to capture measurements at key developmental ages, then it is essential to design a flexible and responsive data collection system, that should be in place on an ongoing basis over decades. This recommendation would involve a major, internationally pioneering departure from the current model of data collection used for the main cohorts, to which we next turn.

⁵<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthcharacteristicsinenglandandwales/2017>

4. Study Design

A key challenge is in designing a feasible data collection system that creates a resource with the ability to address the key scientific lines of enquiry set out in section 2, amongst others. Broadly speaking, there are three major choices with key implications for data collections: **whom** to follow, **when** to follow them, and **what** measures to capture? (the latter is covered in section 5).

4.1 Whom to follow

It will be most straightforward to follow the offspring of *female* cohort members (we also note that the ESRC has specifically commissioned the review to “assess the opportunities and limitations of further study of the pregnancies and births of mothers who are members of Next Steps and the Millennium Cohort Study”). Whilst there is also a unique opportunity to follow the children of fathers, there are some further challenges that would need to be worked through, including:

1. It is important to have the mother on board from the start, as the central caregiver, and the main conduit to her child's enrolment in the study. As female cohort members will have been engaged in the study for at least two decades, we anticipate much higher response rates among them than among ‘new’ mothers (female partners of cohort members); it is also logistically easier to enrol one additional person (the offspring) to a study than two (the mother – partner of male cohort member - and offspring).
2. The absence of prospective data on the mother since her early life would, in our view, be a significant limitation for female partners, given its centrality to later outcomes (Bornstein, 2015).
3. If current trends continue, the vast majority of single-parent families are likely to involve the child living with his/her mother, so we anticipate that loss of offspring from the study due to future parental splits will be considerably lower amongst female than male cohort members.

Additionally, there are strong benefits in following *all offspring* of female cohort members, for reasons outlined in section 2: in brief, such a choice would provide uniquely rich data at a large scale for the study of child development and other matters, including studies of the intra-family allocation of resources and how such allocation translates into intergenerational transmissions; it would also facilitate robust within-family analysis, thereby strengthening causal inference and recommendations for policymaking.⁶ Previous studies such as the children of NLSY79 and ALSPAC have adopted this approach.

⁶ Between-family analysis is more commonly employed on cohort studies, with just one child observed per family, and this involves more restrictive assumptions than a within-family estimation.

4.2 When to follow offspring

We recommend following the offspring at the same ages as MCS cohort members⁷, and to use some of the same measures as administered to the MCS cohort members. We make these recommendations because seeing the children of the original MCS participants at the same ages and with some of the same measures would ensure direct intergenerational comparability between parents and their offspring. For Next Steps, we see no reason to diverge from this model, as it would ensure comparability across generations for MCS and Next Steps offspring.

We additionally recommend to add two developmental waves to the original MCS design, for the following reasons:

1. The original MCS developmental waves were 9 months and 3, 5, 7, 11, 14, and 17 years. We believe that, in addition to a prenatal wave (see 2 below), the new follow-up cohort of offspring should include an assessment at 1-2 years. Developmentally speaking, the gap between 9 months and 3 years is too large, and much critical ontogeny transpires in the second and third years of postnatal life, including, for example, the acquisition of language and symbolic function.
2. In our view, by beginning the MCS cohort study at 9 months the MCS missed an opportunity to study the cohort prenatally.⁸ The intervening years since the inception of the MCS have seen wider recognition of the significance of prenatal life and development for postnatal growth and well-being (Monk et al., 2019). Because the offspring cohorts will be prospective in design, and the NHS tracks prenatal development of UK citizens, it is plausible to access and link biological data on the prenatal development of offspring. These biological data could be supplemented with on-line data collection of psychological instruments in the prenatal period. Challenges of recruitment in pregnancy are discussed in section 5 below.

⁷ Next Steps started at age 14 and therefore has no direct survey measures from earlier in childhood, though it has linked education records from age 4.

⁸ Of course, structural reasons of recruitment prevented any such consideration, and at the time of planning not so much psychologically or behaviourally was understood about the importance of prenatal development for postnatal development.

5. Measurement

With these guiding principles in mind, in this report we provide a comprehensive set of measures at each of the afore-mentioned developmental waves, alongside some considerations and recommendations in selecting which measures to administer.

We recommend that the approach to measurement be multidomain, multivariate, multimodal and multiinformant, providing the most complete and robust insights into the development of the offspring cohorts. By multidomain, we mean that human development embraces many facets, including health and well-being, socioemotional adjustment, cognitive and language growth, relationships, and the environment. Understanding human development requires capturing all these domains as well as their interactions and interdependencies. By multivariate, we mean that each domain can be measured with many instruments, and the best science endeavours to assess any given domain with more than one instrument to be certain that a more than less complete picture of that domain is represented. By multimodal, we mean that insights into human development normally result from following one of three paths: observation, testing, or report. As we explain, each of these three modalities of assessment offers advantages to understanding human development, but the picture of development is also cropped by disadvantages associated with each. In Table 2, we briefly communicate those scientific advantages and disadvantages.

To evaluate and balance these advantages and disadvantages, we recommend that measures of each developmental domain from each modality are included in offspring studies, where feasible. Related to modality, by multiinformant we mean that different person perspectives on the child may yield different understandings of the child. As every modality of study essentially constitutes a “filter” on child development, so does every person (e.g. child, tester, and reporter). We recommend a design that attempts to overcome these filtering effects by assessing children in the offspring cohort with multiple modalities and informants, whilst balancing feasibility considerations.

We recommend a combination of previously-used MCS measures and new measures are used. The former would allow for direct intergenerational comparisons to be made between parents and their offspring. Regarding adding new measures in the offspring cohort⁹, our justification is as follows: in the 20+ years since the MCS was designed, the biological, social, and behavioural sciences have advanced theoretically and empirically, and technological advances have been unprecedented. Many new and significant developmental constructs have been identified, and many new and sturdy developmental measures have been developed. In consequence, we propose to add measures which capture these constructs to the design of the new offspring cohort studies.

⁹ We are aware that, in proposing new developmental waves and new developmental measures, we are in a sense violating an exact replication of the MCS design and thereby jeopardizing direct empirical comparability. Nonetheless, we feel that (1) the measures of the MCS should be adequately robust to overcome participants’ additional developmental and experimental experiences and (2) the costs of missing the opportunity for additional developmental waves and measures are so great as to diminish this concern.

Table 3 sets out, separately by age, the potential measures for each developmental domain (row) and mode of collection (column), including a combination of MCS measures (*italicized*), and new measures (in Roman font face). The latter have been selected on the basis of their strong psychometric properties. Detailed MCS measures are available in (Moulton, 2019); detailed new measures appear in the Appendix. However, Table 3 represents an “ideal” new offspring cohort design – on the criterion of scientific desirability. We recognise that this is not always logistically and financially feasible, and this ideal needs to be balanced with a “feasible” design. As we set out in Section 3, dispersion in the timing of births will result in significant cross-sectional age heterogeneity across the offspring, posing new challenges to measurement and data collection, particularly at such a large scale.¹⁰ Collecting direct, objective measures from offspring at specific developmental ages, or direct observations, would thus require a significant departure from the way we collect data from the cohort itself.

We believe that making extensive use of major recent advances in technology to collect data provides the key to unlocking the potential that an offspring cohort would offer. Remote recordings of child-mother interactions, and of children’s development, are an exciting and real possibility, combined with systems to transfer data back to the scientific team for coding.¹¹ Remote interviews (e.g. on skype) are also increasingly common and acceptable among younger generations (as is the use of Survey Monkey or Collect - Data Collection Tool or Amazon’s Mechanical Turk). Combining this form of data collection with maternal reports, and in-person assessments at carefully selected key ages, would, in our view, be achievable. Within this framework, and drawing on Table 3, our recommendation is that mapping out the measures, modes and ages of collection, and scoping and testing the plan’s feasibility, is taken forward next.¹²

We also advocate strongly for obtaining a wide range of data linkages for the offspring cohorts, including from the wealth of health records available from the prenatal and postnatal period (e.g. the Maternity Services Data Set, child health ‘red books’, health visitor records and developmental records), alongside a whole suite of other records covering their education and health, as for their parents.

One particular focus will be on the best means of recruitment in pregnancy, and we recommend working closely with Understanding Society, ALSPAC and the Southampton Women’s Study on methodology to determine the best way to approach this, and reviewing approaches taken by other more local/focused studies. We recommend scoping the possibility of obtaining regular notifications of births from birth registration data held by NHS Digital. Alternatives include relying on expectant women to inform the study of their pregnancy, though this would be unlikely to be reliable; sending regular reminders to cohort members could be burdensome and intrusive. Annual web surveys (currently at scoping stage) and/or mailings could be used to identify pregnant/early post-partum cohort members. Whilst it would miss prospective capture on

¹⁰ This is in stark contrast to the main cohort, who were all born during a specific period and therefore all age in tandem.

¹¹ Wearable cameras to record mother-child interactions in the home are currently being used in ALSPAC.

¹² We recommend consulting with Understanding Society as part of this.

pregnancy-related behaviours for some, it would capture them for the majority, albeit at different stages of pregnancy. For those already post-partum, retrospective data could be collected within a time frame close to the birth, thereby increasing its reliability (Bornstein, 2019). There is also considerable potential for extensive health record linkage covering the prenatal and postpartum period, as noted above.

We conclude this section with a summary of the challenges in conducting offspring studies, and potential risks involved.

Challenges

- Collection of rich data *at the same ages*, from a sample of babies being born almost continuously over a 30-year period, and all turning different ages at different times. Additional considerations include the geographic dispersion in births across the UK, the multiplicity of ages at which to collect data (prenatal, 9 months, ~2, 3, 5, 7, 11, 14, 17), and a desire to recruit *all* offspring to the study
- Use of novel digital technology to collect rich data to capture child development processes and outcomes
- Recruitment of the sample in pregnancy, or in a short window post-partum
- Recruitment of offspring of male cohort members poses particular challenges, as (a) it also requires enrolling 'new' mothers to the study and (b) loss of offspring from the study due to future parental splits will be considerably higher amongst male than female cohort members.

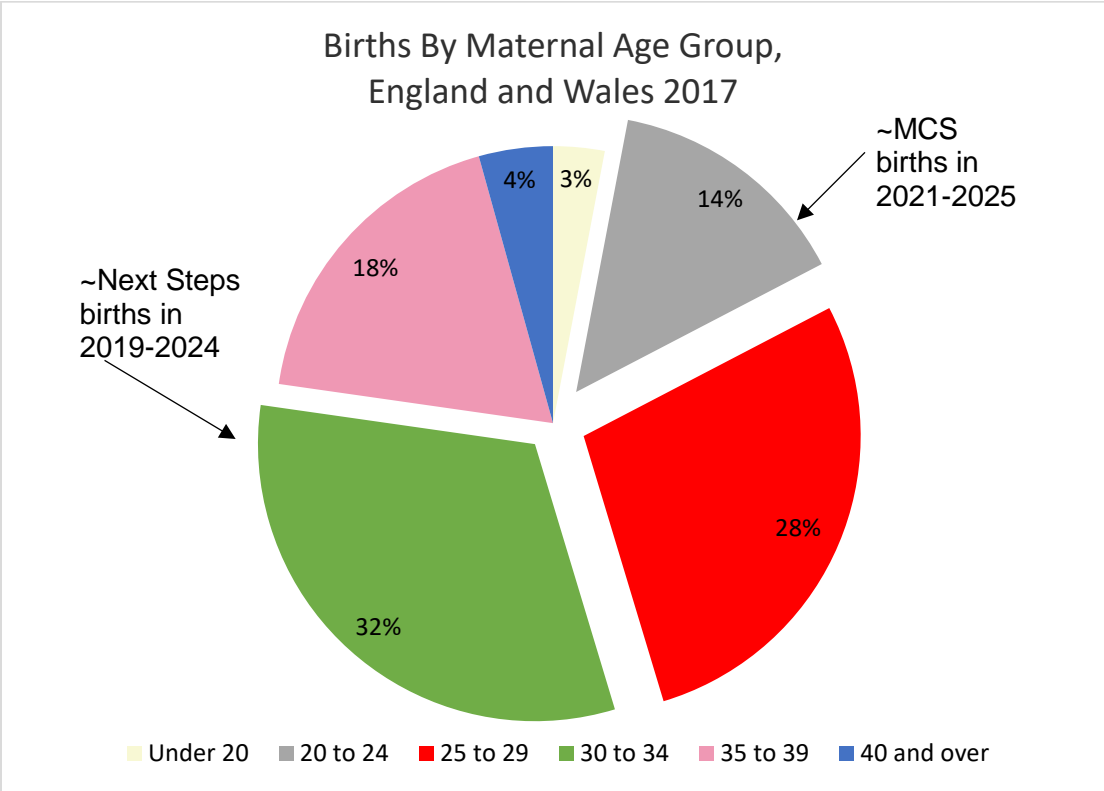
One potential risk that requires careful scoping is the possibility that increased burden on original cohort members reduces their participation in the MCS/Next Steps studies, thereby resulting in increased attrition from the studies. For the offspring studies, risks include the possibility of low enrolment to the study, and the operational challenges arising from the need for ongoing and consistent data collection from children over three decades. Additionally, there is the possibility that the complexity of data collected using novel methods (e.g. via remote recordings of interactions) makes it more challenging to analyse and less user friendly, which would need to be considered and assessed. More generally, clear mitigating actions against these potential risks will need to be determined in the feasibility stage.

6. Sample Representativeness

An important question concerns the representativeness of the offspring cohort. The offspring of the cohorts would, appropriately weighted, form a *representative sample of children who have been born to national samples of women of a particular age* (i.e. women born 2000/02 in MCS or 1989/90 in Next Steps). This is in contrast to other birth cohorts, which typically represent all births across a specific period (e.g. week, year).

Births in any one year occur across a range of maternal ages, with 20-24 year olds (the age range currently being approached by the MCS cohort) accounting for around 14% of births in the last year, and 30-34 year olds (the age range in which Next Steps falls) accounting for 32% of births in the last year (see Figure 2).

Figure 2



Source: Office for National Statistics

The offspring cohort would follow all births as the cohorts of mothers move through their reproductive lives. So at any one point in time, we would capture a slice of overall births across the population for that year; over time, as births to the cohort accumulate, they would represent the flow of births to a representative cohort of women. A simple simulation of the births arising to MCS and Next Steps women over the next 25 years, as a proportion of all births, is shown in Appendix Figure 1A.

The composition of the births would change over time, with earlier births typically to lower SES-parents, and later ones to better off groups. According to [ONS birth statistics](#), in 2016, the average age of the mother in births to households employed in intermediate and routine occupations ranged between 21.5 and 30.0 years depending on NS-SEC class. For households employed in higher managerial, administrative and professional occupations, the average age of mother was slightly higher, between 31.7 and 33.5 years. This is also shown in Table A below, which presents the proportion of births by socio-economic classification within age group. It shows that initial births to MCS mothers captured in a new offspring study in their early 20s would be predominantly among lower SES occupations, whereas upcoming births to Next Step mothers, already in their 30s will be predominantly to middle- and higher SES occupations. Further insights beyond the age and SES characteristics of these samples could also be gained by assessing the characteristics of individuals at the same age as the MCS and Next Steps cohorts within the Labour Force Survey or other large nationally representative cross-sectional dataset. Such analysis has been outside the scope of this project.

However it must be emphasised it is not the goal of the offspring studies to create a sample with the aim of estimating national population prevalences at particular points in time, and it is worth re-iterating that the offspring sample is representative in a different sense (see italicised sentence above) and has a distinct purpose: the uniqueness of the offspring cohort would be the creation of a rich study of the multiple generations that can be used to answer a variety of research questions relating to the drivers of intergenerational transmissions, including the influence of policy, in a variety of domains (see section 2). The combination of longitudinal data from birth/childhood from grandparents (the parents of the cohort members), mothers (the female cohort members), and rich data on their offspring (the proposed cohort) would facilitate a deeper understanding of mechanisms and processes underlying such transmissions than has ever been possible before.

Table A. Proportion of live births by National Statistics Socio-economic Classification (NS-SEC) within age groups, England and Wales 2017

Age of mother	All live births	National Statistics Socio-economic Classification (NS-SEC)									
		1.1 (highest)	1.2	2	3	4	5	6	7	8 (lowest)	N/C
All ages	679,106	3.79%	15.40%	28.91%	11.21%	9.94%	7.49%	10.31%	7.10%	0.00%	5.85%
Under 25	117,864	0.62%	2.41%	15.48%	13.09%	10.94%	11.07%	18.00%	13.75%	0.01%	14.63%
25 to 34	406,815	3.67%	15.67%	31.01%	11.70%	10.13%	7.55%	9.59%	6.28%	0.00%	4.39%
35 and over	154,427	6.54%	24.59%	33.63%	8.47%	8.65%	4.58%	6.34%	4.20%	0.00%	3.00%

Numbers in top row represent NS-SEC classification; N/C=not classified

Source: Table 10 of ONS [Births by parents' characteristics](#)

7. Scientific case for studies of grandparenting

The scientific case for following offspring of the MCS and Next Steps cohorts, discussed in section 2, can be readily extended to grandchildren of BCS70 and NCDS. Most models of intergenerational transmissions are based on two generations, focusing on parents and their children, though (Mare, 2011) makes a strong case for extending to multigenerational effects. A recent special issue on grandparents highlights the increasing role they are playing in raising the next generation (Buchanan and Rotkirch, 2018), fuelled by longer, healthier lives (spending an average of 20-30 years as grandparents) and rising divorce rates and increased maternal labour supply. Moreover the UK has witnessed a steady rise in three generation households in the UK - homes with at least one child, parent and grandparent - from 325,000 in 2001 to 419,000 in 2013 (Source: ONS, using LFS data).

Having prospective data on the cohort members' grandchildren would, in combination with rich prospective data from their own lives, further expand the scope of studies on understanding the longevity of family background as an influence in people's lives and intergenerational transmissions in a wide range of domains. In addition, enrolling grandchildren to the studies would provide important new insights for the cohorts into the extent to which grandchildren influence the health and wellbeing of their grandparents as they age; whilst there is some empirical evidence on this, it is mainly limited to studies of grandparents who act as carers for their grandchildren e.g. (Hughes et al., 2007).

With rich data available from birth on a large cohort of individuals entering, or already in, grandparenthood - alongside rich data on their own parents and some data on their own children – this type of study would be completely unique in the world (since there are no other birth cohort studies in the world to have reached this level of maturity except in the UK). Whilst the design and feasibility considerations of such a study are beyond the scope of this report, it would necessitate enrolling both the grandchildren and at least one of their parents (i.e. the offspring of the cohort member) to the study, which would entail additional challenges. Unlike for MCS and Next Steps we would not recommend attempting to enrol all grandchildren of study members of a particular gender, instead this would need to be designed as bespoke grandchildren sub-study. Additional consideration would need to be given to optimal ages of measurement, to align with BCS70 and NCDS cohort members' own ages of measurement in the study.

Our view is that enrolling grandchildren into the older cohorts should be done with the aim of testing specific hypotheses, guided both by scientific potential and policy relevance, and capitalising on the unique features of data collected thus far from cohort members in the studies.

8. Conclusions and Recommendations

Given the uniquely rich prospective data collected in the studies to date, there is a compelling scientific case for setting up offspring studies for MCS and Next Steps, and they would contribute in major ways to three main areas. First, such studies would be uniquely placed to understand the roots of family background and the drivers of intergenerational transmission of advantage and disadvantage, providing rich evidence to inform the design of policies to reduce societal inequality. Second, they would deepen our understanding of the intra-household allocation of resources, how it relates to parents' own experiences and upbringing, and how and why outcomes across their offspring vary. Third, they would provide novel evidence on the extent to which offspring affect their parents' health and wellbeing, throughout the whole of their lives as they move from childhood and into adulthood, including eventually as key agents in the long-term care of ageing parents.

Concerning the design of offspring studies, we recommend the following:

1. To follow all offspring of female cohort members, to follow the offspring at the same ages as MCS cohort members, and to use some of the same measures as administered to the MCS cohort members. We additionally recommend to add two developmental waves to the original MCS design – prenatally and at a point between age 9 months and 3 years.

2. To use a multidomain, multivariate, multimodal and multiinformant approach to measurement, providing the most complete and robust insights into the development of the offspring. A comprehensive set of measures at each developmental wave is provided in this report, alongside some considerations and recommendations in selecting which measures to administer, to be used as the basis for selecting measures at the next stage of scoping.

3. To make extensive use of major recent advances in technology to collect data, and in particular combining remote data collection with maternal reports, and in-person assessments at carefully selected key ages. We recommend that mapping out the measures, modes and ages of collection, and carefully scoping and testing the plan's feasibility, is taken forward next.

We believe there are strong reasons to follow the offspring of both cohorts, and can exploit economies of scale to do this and to facilitate cross-cohort comparisons for two generations that, though just over ten years apart, have faced different environments growing up – including in exposure to the digital revolution and to economic recession – and already show starkly contrasting physical health (obesity) and mental illness. We believe that the fact that the MCS has been followed since birth, and therefore has rich data on family life and parenting from early ages, including also genetic data, will confer important additional advantages in terms of answering the scientific questions set out in section 2.

Finally, we believe the scientific case for following offspring extends naturally to grandchildren, and recommend that a hypothesis-driven study of grandparenting is scoped next, with careful consideration given to the feasibility of enrolling both grandchildren and their parent(s) to the study. The measures set out in this report are equally relevant for grandchildren, though we recommend some measures are chosen to also align with the NCDS and BCS70 cohort members.

9. Tables

Table 1. Projected Fertility, MCS and Next Steps

ONS age-specific fertility rate 2017		MCS				Next Steps		
Age	%	Year	Age	Expected N of CMs	Expected N of offspring	Age	Expected N of CMs	Expected N of offspring
14	0.2	2015	14	4366	1			
15	1.0	2016	15	4322	4	26	3113	268
16	3.6	2017	16	4279	15	27	3082	302
17	10.2	2018	17	4236	43	28	3051	320
18	17.5	2019	18	4193	74	29	3021	333
19	28.9	2020	19	4152	120	30	2990	339
20	38.7	2021	20	4110	159	31	2960	343
21	45.4	2022	21	4069	185	32	2931	334
22	54.4	2023	22	4028	219	33	2902	310
23	60.0	2024	23	3988	239	34	2873	283
24	68.6	2025	24	3948	271	35	2844	253
25	77.1	2026	25	3909	301	36	2815	217
26	86.1	2027	26	3870	333	37	2787	179
27	98.1	2028	27	3831	376	38	2759	142
28	104.8	2029	28	3793	398	39	2732	112
29	110.4	2030	29	3755	414	40	2704	81
30	113.2	2031	30	3717	421	41	2677	55
31	116.0	2032	31	3680	427	42	2651	35
32	114.0	2033	32	3643	415	43	2624	20
33	106.9	2034	33	3607	386	44	2598	11
34	98.6	2035	34	3571	352	45	2572	15
35	88.8	2036	35	3535	314			
36	76.9	2037	36	3500	269			
37	64.2	2038	37	3465	222			
38	51.6	2039	38	3430	177			
39	41.1	2040	39	3396	140			
40	30.0	2041	40	3362	101			
41	20.7	2042	41	3328	69			
42	13.1	2043	42	3295	43			
43	7.5	2044	43	3262	25			

44	4.3	2045	44	3229	14
45	5.9	2046	45	3197	19

Notes:- MCS N @ age 17=10,600 (A/S 52% female); Next Steps N @ 25=7,707 (51% female).
 Assumptions - annual attrition rate 1%; offspring response rate 80% (assumed constant across time + offspring).

Table 2. Three main paths to understanding child development, and their relative advantages and disadvantages

Advantages		Disadvantages
Observe children		
<ul style="list-style-type: none"> • <i>Spontaneous</i> • <i>Picture of typical performance</i> • <i>Easy</i> • <i>Ecologically valid</i> • <i>Direct and objective</i> 		<ul style="list-style-type: none"> • <i>Underestimate</i> • <i>Decisions about recording and analysis: when? how frequently? with whom?</i>
Test children		
<ul style="list-style-type: none"> • <i>Provides assessment of capacity</i> • <i>Controlled and structured</i> • <i>Thought to be equal and fair</i> 		<ul style="list-style-type: none"> • <i>Performance affected by motivation</i> • <i>Generalizability?</i> • <i>Bias?</i>
Report about children		
<ul style="list-style-type: none"> • <i>Picture based on most knowledgeable and experienced reporter</i> • <i>Easy and comprehensive</i> 		<ul style="list-style-type: none"> • <i>Subjective and unsystematic</i> • <i>Overgenerous?</i> • <i>Indirect</i>

Table 3. Ages, Modalities, Domains, and Measures proposed for the new offspring cohort design

Prenatal			
	Observe	Test	Report
Health and Well-being	NHS Maternity Services Data Set	NHS - Maternity Services Data Set	Mother: Jackson Personality Inventory; Crown-Crisp Index; Symptom Checklist 90-R; Pregnancy Specific Anxiety Scale; Studies-Depression; Multidimensional Scale of Perceived Social Support; Perceived Stress Scale; Pregnancy Related Anxieties Questionnaire-Revised; Psychosocial Hassles Scale; Brief Symptom Inventory; State Trait Anxiety Inventory; Stressful Life Events; Knowledge of Infant Development Scale; Prenatal Coping Inventory; Ideal Child Checklist
Socioemotional Adjustment	N/A	N/A	Infant: Infant Characteristics Questionnaire; Maternal Perceptions Questionnaire; Baby Behavior Questionnaire; Maternal Adaptation Scales
Cognition and Language	N/A	N/A	Mother: Wechsler Adult Intelligence Scale Infant: Maternal Perceptions Questionnaire
Relationships		N/A	Mother: Postpartum Bonding Questionnaire
Environment	NHS data	N/A	

N/A not applicable.

Age 9 months			
	Observe	Test	Report
Health and Well-being	N/A	Personal child health record ('red book'); administrative health records	Vineland Adaptive Behavior Scales; Mackey Childbirth Satisfaction Scale; Wijma Delivery Expectancy/Experience Questionnaire; Prenatal Maternal Expectations Scale; What Being the Parent of a Newborn Baby is Like
Socioemotional Adjustment	Behavioral Observations ¹ ; Infant Behavior Questionnaire-Revised	N/A	Vineland Adaptive Behavior Scales <i>Parent: Malaise Inventory; Depression symptoms; Depression or anxiety diagnosis, treatment</i> Edinburgh Postnatal Depression Scale; Symptom Checklist-90-R
Cognition and Language	Behavioral Observations: Child-Alone Play	Reynell Developmental Language Scales Peabody Picture Vocabulary Test-Revised	Developmental Milestones British CDI Vineland Adaptive Behavior Scales
Relationships	Behavioral Observations: Mother and Child Emotional Availability; Mother Play with Child	N/A	Vineland Adaptive Behavior Scales; Postpartum Bonding Questionnaire; Maternal Adaptation Scales; Bethlehem Mother Infant Interaction Scale; Mothers Performance Goals for Her Child

Environment	HOME Behavioral Observations:		Index of Socioeconomic Status Personality Inventory
-------------	-------------------------------	--	--

¹ Behavioral Observations require visiting the home, videorecording mother-child interactions, coding videorecordings, and reducing and analysing data – all labor intensive.

Age 1-2 years			
	Observe	Test	Report
Health and Well-being	N/A	Personal child health record ('red book')	Vineland Adaptive Behavior Scales; Knowledge of Infant Development Scale
Socioemotional Adjustment		<i>Strengths & Difficulties Questionnaire</i>	Vineland Adaptive Behavior Scales
Cognition and Language	Behavioral Observations: Child-Alone Play	Reynell Developmental Language Scales Peabody Picture Vocabulary Test-Revised	British CDI Vineland Adaptive Behavior Scales Knowledge of Infant Development Inventory; Parental Attributions Questionnaire; Parental Style Questionnaire; Self Perception of the Parental Role
Relationships	Behavioral Observations: Mother and Child Emotional Availability; Mother Play with Child; Mother and Child Language	N/A	Index of Socioeconomic Status Personality Inventory
Environment	HOME	N/A	Index of Socioeconomic Status

Age 3 years			
	Observe	Test	Report
Health and Well-being		Personal child health record ('red book')	Vineland Adaptive Behavior Scales
Socioemotional Adjustment		<p><i>Strengths & Difficulties Questionnaire; Child Social Behaviour Questionnaire</i></p> <p>Pictorial Scale of Perceived Competence & Social Acceptance</p>	<p>Vineland Adaptive Behavior Scales Preschool Behavior Questionnaire; Activity Diary</p> <p>Maternal Perceived Stress Scale</p>
Cognition and Language		<p><i>BAS (II) Naming Vocabulary</i></p> <p><i>Bracken School Readiness Assessment</i></p> <p>Draw-A-Person Test; Weschler Preschool & Primary Scale of Intelligence, Revised; Draw-A-Person Test (McCarthy Scales of Children's Abilities); Pictorial Scale of Perceived Competence & Social Acceptance; Storytelling: Narrative Analysis and language</p>	<p>Vineland Adaptive Behavior Scales; Preschool Behavior Questionnaire; Draw-A-Person Test (McCarthy Scales of Children's Abilities)</p>

Relationships		Mother Child Interaction	Parental Acceptance-Rejection Questionnaire
Environment	HOME	N/A	Activity Diary; Index of Socioeconomic Status; Social Network Form; Social Network Form or Social Support Network Questionnaire

Age 5 years			
	Observe	Test	Report
Health and Well-being			Vineland Adaptive Behavior Scales;
Socioemotional Adjustment		Pictorial Scale of Perceived Competence & Social Acceptance <i>Strengths & Difficulties Questionnaire; ADHD Diagnosis; Autism Diagnosis; Child Social Behaviour Questionnaire</i> Pictorial Scale of Perceived Competence & Social Acceptance	Preschool Behavior Questionnaire; Vineland Adaptive Behavior Scales; Activity Diary; Parenting Stress Index; Minnesota Child Development Inventory <i>Parent: Kessler Psychological Distress Scale; Short Form Health Survey; Depression or anxiety diagnosis, treatment</i>

Cognition and Language		<i>BAS Naming Vocabulary; BAS Pattern Construction; BAS Picture Similarities</i> Draw-A-Person Test; Weschler Preschool & Primary Scale of Intelligence, Revised; Draw-A-Person Test (McCarthy Scales of Children's Abilities); Pictorial Scale of Perceived Competence & Social Acceptance; Storytelling: Narrative Analysis and language	Vineland Adaptive Behavior Scales; Minnesota Child Development Inventory Maternal Perceived Stress Scale
Relationships		Mother Child Interaction	
Environment	HOME	N/A	Activity Diary; Activity Diary; Index of Socioeconomic Status; Social Network Form; Social Network Form; Index of Socioeconomic Status
Age 7 years			
	Observe	Test	Report
Health and Well-being			Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire; Coping Scale for Children and Youth Maternal Perceived Stress Questionnaire

<p>Socioemotional Adjustment</p>		<p><i>Strengths & Difficulties Questionnaire; ADHD Diagnosis; Autism Diagnosis; Child Social Behaviour Questionnaire</i></p>	<p>Child Behavior Checklist; Child Behavior Checklist B Teacher Report Form; Children's Competence Beliefs and Subjective Task Values</p> <p>Children's Occupation, Activity and Trait Measures; Coping Scale for Children and Youth; Index of Empathy for Children; Revised Children's Manifest Anxiety Scale; Self-Perception Profile for Children</p> <p><i>Parent: Short Form Health Survey; Kessler Psychological Distress Scale; Depression or anxiety diagnosis, treatment</i></p>
<p>Cognition and Language</p>		<p><i>BAS Word Reading; BAS Pattern Construction; NFER Progress in Maths (adapted)</i></p> <p>Wechsler Intelligence Scale for Children; Draw-A-Person Test; Metacognitive Interview; Star Counting Task; Storytelling: Narrative Analysis and language</p>	<p>Children's Competence Beliefs and Subjective Task Values; Child Rating Questionnaire (Parent & Teacher Reports); Intrinsic vs. Extrinsic Orientation in the Classroom; My Classroom Inventory</p>

Relationships			<p>Children's Competence Beliefs and Subjective Task Values; Junior Self-Monitoring Scale; Perceptions of Peers and Self Inventory; Child's Report of Parental Behavior; Kerns Security Scale; Sibling Relationship Questionnaire Revised</p> <p>Parenting Stress Index</p>
Environment	HOME	N/A	Index of Socioeconomic Status

Age 11 years			
	Observe	Test	Report
Health and Well-being		<p><i>Alcohol use; Alcohol Use Disorder Identification Test</i></p> <p><i>Longstanding illness, disability</i></p> <p><i>Wellbeing</i></p>	<p>Children's Depression Inventory</p> <p>Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire; Coping Scale for Children and Youth</p> <p>Maternal Perceived Stress Questionnaire</p>
Socioemotional Adjustment		<p><i>Strengths & Difficulties Questionnaire; Exclusion – suspension; Truancy; Special Education Needs; Rosenberg Self-Esteem Scale; Inventory of Callous-Unemotional traits; Antisocial behaviour; Antisocial behaviour – attitudes; Autism Diagnosis; Depression, anxiety symptoms; Bullying</i></p> <p>Metacognitive Interview; Storytelling: Narrative Analysis and language</p>	<p>Child Behavior Checklist</p> <p>Child Behavior Checklist B Teacher Report Form</p> <p>Children's Competence Beliefs and Subjective Task Values; Coping Scale for Children and Youth; Early Adolescent Temperament Questionnaire; Children's Depression Inventory Children's Depression Inventory; Children's Occupation, Activity and Trait Measures; Index of Empathy for Children; Revised Children's Manifest Anxiety Scale; Self-Perception Profile for Children</p>

			<p><i>Parent: Kessler Psychological Distress Scale; Short Form Health Survey; Depression or anxiety diagnosis, treatment</i></p>
Cognition and Language		<p><i>BAS Verbal Similarities; CANTAB Cambridge Gambling Task; CANTAB Spatial Working Memory task; Exclusion – suspension; school absence - sickness, exclusion; Additional support at school; School behaviour; Truancy; Additional support at school; School behaviour</i></p> <p>Wechsler Intelligence Scale for Children; Draw-A-Person Test; Star Counting Task</p>	<p>Children's Competence Beliefs and Subjective Task Values; Child Rating Questionnaire (Parent & Teacher Reports); Intrinsic vs. Extrinsic Orientation in the Classroom; My Classroom Inventory</p>
Relationships		<p>Mother and Child Joint Arithmetic Task</p>	<p>Children's Competence Beliefs and Subjective Task Values; Perceptions of Peers and Self Inventory; Junior Self-Monitoring Scale; Perceptions of Peers and Self Inventory; Child's Report of Parental Behavior; Kerns</p>

			Security Scale; Sibling Relationship Questionnaire Revised; Parenting Stress Index
Environment	N/A	N/A	McMaster Family Assessment Device; Index of Socioeconomic Status; Revised Dyadic Adjustment Scale

Age 14 years			
	Observe	Test	Report
Health and Well-being		<i>Alcohol use; Substance use; Longstanding illness, disability; ADHD Diagnosis; Autism Diagnosis; Wellbeing</i>	Children's Depression Inventory; Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire; Coping Scale for Children and Youth; Child's Health Beliefs Questionnaire; Coping Scale for Children and Youth; Pubertal Development Scale; Vineland Adaptive Behavior Scales
Socioemotional Adjustment		<i>Strengths & Difficulties Questionnaire; Gambling behaviour; Bullying; Antisocial behaviour; Rosenberg Self-Esteem Scale; Moods and Feelings Questionnaire; Self-harm; Antisocial behaviour - attitudes</i>	Child Behavior Checklist; Child Behavior Checklist B Teacher Report Form; Teacher's Predictions of Peer Nominations; Children's Competence Beliefs and Subjective Task Values; Early Adolescent Temperament Questionnaire; Adolescent Interpersonal Competence Questionnaire; Child Rating Questionnaire; Early Adolescent Temperament Questionnaire - Revised SF; Index of Empathy for Children and Adolescents; Junior Self-Monitoring Scale; Revised Children's Manifest Anxiety Scale; Separation Individuation Test of Adolescence; Sociomoral Reflection Measure; Youth Self-Report Inventory; Kerns Security Scale <i>Parent: Kessler Psychological Distress Scale; Depression or anxiety diagnosis, treatment; Alcohol Use Disorder Identification Test; Substance use; Life satisfaction</i> Adult Temperament Questionnaire; Center for Epidemiological Studies Depression Scale; Child's Report of Parental Behavior; Maternal Perceived Stress Scale; Parenting

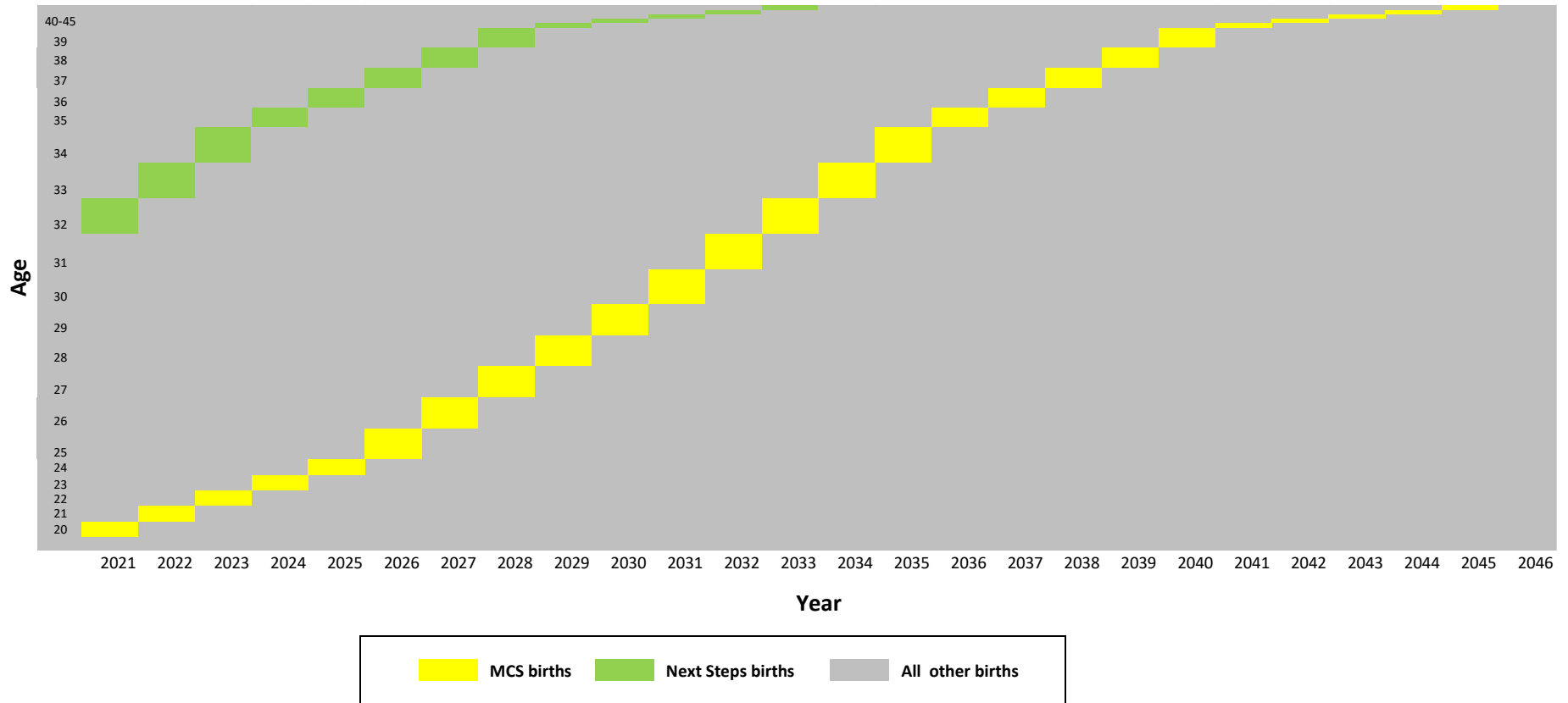
			Stress Index; Parents of Adolescents Separation Anxiety Scale
Cognition and Language		<p><i>CANTAB Cambridge Gambling Task; APU Vocabulary Test; Exclusion – suspension; school absence - sickness, exclusion; Additional support at school; School behaviour; Truancy</i></p> <p>Wechsler Intelligence Scale for Children</p>	Children's Competence Beliefs and Subjective Task Values; Emotional Autonomy Scale; Self-Perception Profile for Adolescents
Relationships		Mother and Child Joint Arithmetic Task	Children's Competence Beliefs and Subjective Task Values; Perceptions of Peers and Self Inventory; Parental Bonding Instrument; Self-Perception of the Parental Role; Social Support Scale for Children
Environment	N/A	N/A	Parenting Stress Index; McMaster Family Assessment Device; Conflict Behavior Questionnaire; Index of Socioeconomic Status; Revised Dyadic Adjustment Scale; Sibling Relationship Questionnaire Revised

Age 18 years			
	Observe	Test	Report
Health and Well-being			<p>Children's Depression Inventory; Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire; Coping Scale for Children and Youth; Risk/Activities Questionnaire</p> <p>Center for Epidemiological Studies Depression Scale</p>
Socioemotional Adjustment			<p>Child Behavior Checklist; Child Behavior Checklist B Teacher Report Form; Teacher's Predictions of Peer Nominations; Children's Competence Beliefs and Subjective Task Values; Emotional Autonomy Scale; EOM-EIS Identity Questionnaire; Erikson Psychosocial Stage Inventory; Kerns Security Scale; Markers of Adulthood; Inventory of the Dimensions of Emerging Adulthood; Sociomoral Reflection Measure; Optimism Scale; Separation-Individuation for Adolescents; Social Support Scale for Children</p> <p>Parental Stress Index; Self Perception of the Parental Role; Perceived Stress Scale; Child Rating Questionnaire; Parents of Adolescents Separation Anxiety Scale</p>
Cognition and Language		Wechsler Intelligence Scale for Children	<p>Children's Competence Beliefs and Subjective Task Values; Personal Projects Analysis; Self-Perception Profile for Adolescents</p> <p>General Ability Measure for Adults</p>
Relationships		Mother and Child Joint Arithmetic Task	<p>Children's Competence Beliefs and Subjective Task Values; Perceptions of Peers and Self Inventory; Child's Report of Parental Behavior; Conflict Behavior Questionnaire</p>
Environment	N/A	N/A	<p>Parenting Stress Index; McMaster Family Assessment Device; Parental Bonding Instrument; Social Support Scale for Children; Conflict Behavior Questionnaire;</p>

			Perception of Family Difference Scale; Sibling Relationship Questionnaire Revised;
--	--	--	---

10. Appendix

Figure 1A. Births to MCS and Next Steps study mothers as % of all births¹³



¹³ Note: Figures were calculated assuming the age structure of births 2020-2046 remains the same as in 2017 (see Figure 2), and assuming an equal birth rate at each age within 5-year age band

10.1 Proposed new measures

Prenatal Development and Postnatal Assessment

Baby Behavior Questionnaire

Measures: Infant behavior

Scales: Intensity/activity, regularity, approach-withdrawal, sensory sensitivity, attentiveness, manageability

Scale/Item Reliability: $\alpha=0.72, 0.73, 0.50$

Short-term Reliability:

Validity:

Citation: Bohlin, Hagekull, and Lindhagen, 1981

Bethlehem Mother Infant Interaction Scale

Measures: Mother baby bond

Scales: the amount that mother and baby like looking at each other, the amount that mother and baby like touching each other, the reactivity of the infant to the mother, the ability of the mother to read and understand infant's mood, the ease with which the infant gets into a routine, the likelihood that the infant will come to harm

Scale/Item Reliability: internal consistency 0.76

Short-term Reliability:

Validity:

Citation: Pearce and Ayers, 2005

Brief Symptom Inventory

Measures: Maternal anxiety and depression

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Derogatis & Melisaratos, 1983

Center for Epidemiological Studies-Depression

Measures: Level of depression symptoms in the past week

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Fava, 1982

Child Adolescent Perception Scale (CAPS)

Measures: Child's perfectionism

Scales: self-oriented perfectionism, socially prescribed perfectionism

Scale/Item Reliability: Cronbach's alpha .70 and .77 respectively

Short-term Reliability:

Validity:

Citation: Flett, Hewitt, Boucher, Davidson and Munro, 2000

Crown-Crisp Index

Measures: Maternal Anxiety

Scales: Anxiety

Scale/Item Reliability: internal consistencies exceed 0.80

Short-Term Reliability: NA

Validity:

Citation: Birtchnell et al. 1988, Sutherland & Cooper, 1992

Early Infant Temperament Questionnaire

Measures: Infant temperament

Scales: Activity, Rhythmicity, Approach/withdrawal, Adaptability, Intensity, Mood, Persistence, Distractibility, Sensory Threshold

Scale/Item Reliability: Cronbach's alpha ranged from 0.36- 0.75

Short-Term Reliability:

Validity:

Citation: Axia, 1993, Medoff-Cooper, Carey & McDevitt, 1993, Vedova, 2014

Edinburgh Postnatal Depression Scale

Measures: Maternal Depression

Scales: 10 item self-report

Scale/Item Reliability: internal consistencies exceeded 0.80

Short-Term Reliability:

Validity: Sensitivity (100%), specificity (87%)

Citation: Cox et al, 1987, Murray & Carothers, 1990

Emotional Availability Scales

Measures:

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Biringen, Robinson & Emde 2000

Hospital Anxiety and Depression Scale

Measures: State anxiety

Scales: anxiety, depression

Scale/Item Reliability: internal consistencies anxiety (0.93), depression (0.90)

Short-term Reliability:

Validity:

Citation: Zigmond and Snaith, 1983

Ideal Child Checklist (ICC)

Measures: Parents perceptions of the ideal child

Scales: Factor 1: Confident, Aggressive, Well-Adjusted, Factor 2: Socially Virtuous, Factor 3: Negativistic, Critical, Factor 4: Creative, Intuitive

Scale/Item Reliability: internal consistencies range from $\alpha=0.50-0.70$

Short-term Reliability:

Validity:

Citation: Torrance, 1975

Index of Psychiatric Symptoms in Children

Measures: Child Behavioral assessment

Scales: Conduct problems, emotional problems, hyperactivity/inattention

Scale/Item Reliability: Internal consistencies of the scales ranged from 0.62 to 0.75

Short-Term Reliability:

Validity:

Citation: Elander & Rutter, 1996

Infant Behavior Questionnaire-Revised

Measures: Infant Temperament

Scales: Activity Level, Distress to Limitations, Fear, Duration of Orienting, Falling Reactivity, Sadness

Scale/Item Reliability: Internal consistencies ranged from 0.70 to 0.85

Short-Term Reliability:

Validity:

Citation: Garstein and Rothbart, 2003, Roza et al., 2008

Infant Characteristics Questionnaire

Measures: Child Behavior

Scales: Fussy/Difficult Temperament, Unadaptable, Dull, Unpredictable

Scale/Item Reliability: internal consistency and test retest reliability .57-.79

Short-term Reliability:

Validity:

Citation: Bates et al., 1979

Infant Temperament Questionnaire - Revised

Measures: Infant Behavior

Scales: Activity Level, Rhythmicity, Adaptability, Approach-withdrawal, Intensity, Mood, Persistence, Distractibility, Threshold

Scale/Item Reliability: correlation coefficients: $r=0.71, 0.67, 0.58, 0.57, 0.45, 0.32$

Short-term Reliability:

Validity:

Citation: Carey and McDevitt, 1978

Internalization Scale

Measures: Children's internalization of mother's values

Scales:

Scale/Item Reliability: Cronbach's alpha .82

Short-term Reliability:

Validity:

Citation: Ying Tong and Lam, 2011

Jackson Personality Inventory

Measures: Maternal Personality

Scales: Anxiety, Breadth of Interest, Conformity, Energy Level, Innovation, Interpersonal Affect, Organization, Responsibility, Self Esteem, Social Participation, Value Orthodoxy

Scale/Item Reliability: In two studies, median internal consistency reliabilities (Bentler 's Theta) were .90 and .93.

Short-term Reliability: Not available

Validity: Median correlations with Adjective Checklist, Self-Rating, and Peer Rating are .70, .56, and .38, respectively.

Citation: Jackson, D. N. (1976). *Jackson Personality Inventory: Manual*. Port Huron, MI: Research Psychologists Press, Div. Sigma Assessment Systems

Knowledge of Infant Development Scale

Measures: Maternal knowledge of developmental milestones

Scales: Physical and Social milestones

Scale/Item Reliability: $\alpha=0.84$

Short-term Reliability:

Validity:

Citation: Paikoff, 1987

Life Events Survey

Measures: Life stress

Scales: Occurrence and valence of major stressors and life events occurring in the past year

Scale/Item Reliability: test retest reliability $r=0.63$ and 0.64

Short-term Reliability:

Validity:

Citation:

Mackey Childbirth Satisfaction Scale

Measures: Satisfaction

Scales: General satisfaction, satisfaction with self, baby, midwife, physician and partner

Scale/Item Reliability: Internal consistency reliability coefficients (Cronbach's alpha for $N=605$), total scale: $\alpha=0.95$, self: $\alpha=0.84$, baby: $\alpha=0.74$, midwife: $\alpha=0.96$, physician: $\alpha=0.94$, partner: $\alpha=0.85$, general: $\alpha=0.71$

Short-term Reliability:

Validity:

Citation: Goodman et al.

Maternal Adaptation Scales

Measures: Maternal adaptation

Scales: Maternal roles, Irritability, Stress, Coping, Satisfaction

Scale/Item Reliability: $\alpha = 0.58, 0.59, 0.50, 0.55, 0.63$ respectively

Short-term Reliability:

Validity:

Citation: Hagekull, 1981

Maternal Perceptions Questionnaire

Measures: Child's Social and Intellectual Characteristics

Scales: Language Competence, Unresponsiveness to Mother, Psychomotor Incompetence, Unsociable, Compliant and Mature, Troublesome

Scale/Item Reliability:

Short-term Reliability:

Validity:

Citation: Olson, Bates, and Bayles, 1982

Minnesota Child Development Inventory

Measures: Developmental competence

Scales: Language, Social

Scale/Item Reliability:

Short-term Reliability:

Validity:

Citation: Ireton & Thwing, 1974

Mothers Performance Goals for Her Child

Measures: Mother's evaluation of her child

Scales: The importance of obtaining positive performance, avoidance of any negative performance outcomes, an emphasis on natural learning ability, devaluing the importance of learning

Scale/Item Reliability: Cronbach's $\alpha .79$

Short-term Reliability:

Validity:

Citation: Ricco, McCollum and Schuyten, 2003

Multidimensional Personality Questionnaire

Measures: Maternal Personality

Scales: Positive Affect, Negative Affect, Constraint

Scale/Item Reliability: internal consistencies alpha's range from .76 to .89, retest reliability .89

Short-term Reliability:

Validity:

Citation: Tellegen, 1982

Multidimensional Scale of Perceived Social Support

Measures: Women's perception of her level of social support

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Zimet, Dahlem, Zimet & Farley, 1988

Parental Acceptance-Rejection Questionnaire

Measures: Maternal perceptions of their own parents

Scales: Perceived parental warmth, hostility, neglect/ indifference, undifferentiated rejection

Scale/Item Reliability: $\alpha=0.95, 0.93, 0.88, 0.86$ respectively

Short-term Reliability:

Validity:

Citation: Rohner, Saavedra and Granum, 1980

Perceived Stress Scale

Measures: Maternal perceived stress

Scales:

Scale/Item Reliability: Cronbach's $\alpha=0.92$

Short-Term Reliability:

Validity

Citation: Cohen & Williamson, 1987

PLIKSi Semi-structured interview

Measures: Non-clinical psychotic symptoms

Scales: hallucinations, delusions, and bizarre delusions

Scale/Item Reliability: kappa value for interrater reliability was 0.72

Short-Term Reliability:

Validity:

Citation: Horwood et al., 2008

Postpartum Bonding Questionnaire

Measures:

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Brockington, Fraser & Wilson, 2006

Pregnancy Related Anxieties Questionnaire-Revised

Measures: Maternal anxiety

Scales: Fear of giving birth, fear of bearing a physically or mentally handicapped child, concern about one's own appearance

Scale/Item Reliability: Cronbach's alphas all >.76

Short-Term Reliability:

Validity

Citation: Huizink, 2000, Van den Bergh, 1990

Pregnancy Specific Anxiety Scale

Measures: Maternal Anxiety

Scales: Worries about their health, their baby's health, labor and delivery and caring for their baby

Scale/Item Reliability: Cronbach's $\alpha = 0.81$

Short-Term Reliability:

Validity:

Citation: Rini et al., 1999

Prenatal Coping Inventory (NuPCI)

Measures: Maternal Coping strategies

Scales: Avoidance strategies, Approach strategies

Scale/Item Reliability: $\alpha=0.73$, $\alpha=0.85$

Short-term Reliability:

Validity:

Citation: Hamilton and Lobel, 2008

Prenatal Maternal Expectations Scale

Measures: Prenatal expectations regarding the infant

Scales: Baby, Enjoy, Friends, Life, Image

Scale/Item Reliability: Cronbach's $\alpha=0.80$

Short-term Reliability:

Validity:

Citation: Coleman, 1999

Preschool Behavior Questionnaires

Measures: Child's Behavior

Scales: Hostile, Hyperactive, Anxious

Scale/Item Reliability:

Short-term Reliability:

Validity:

Citation: Behar, 1977

Psychosocial Hassles Scale

Measures: Psychosocial Stress

Scales: Money worries, Problems with friends

Scale/Item Reliability:

Short-Term Reliability:

Validity:

Citation: Misra et al., 2001, Curry et al., 1994

Social Support Network Questionnaire

Measures: Amount of perceived social support and satisfaction with support

Scales: Support, Satisfaction

Scale/Item Reliability: test retest reliability $r=0.76$, $p<0.01$ for support, $r=0.54$, $p<0.05$ for satisfaction

Short-term Reliability:

Validity:

Citation: Rhodes, Ebert, Meyers and Davis, 1995

State Trait Anxiety Inventory

Measures: Maternal anxiety

Scales:

Scale/Item Reliability: Internal consistency coefficients range from 0.86-0.95

Short-Term Reliability:

Validity

Citation: Spielberger & Gorsuch, 1983

Stressful Life Events

Measures:

Scales:

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation: Whitehead, Brogan, Blackmore-Prince & Hill, 2003

Symptom Checklist 90-R

Measures: Maternal Anxiety

Scales: 10 item anxiety scale

Scale/Item Reliability:

Short-Term Reliability:

Validity: good convergent and divergent validity (Morgan et al., 1998)

Citation: Geisbrecht et al.

Wechsler Adult Intelligence Scale

Measures: Assessment of Intelligence

Scales: Verbal IQ, Performance IQ, Full scale IQ

Scale/Item Reliability:

Short-Term Reliability:

Validity

Citation:

What Being the Parent of a Newborn Baby is Like (WPL-R)

Measures: Postnatal Experiences

Scales: Evaluation, Centrality, Life Change

Scale/Item Reliability: Cronbach's alpha = 0.70

Short-term Reliability:

Validity:

Citation: Chang, 1989

Wijma Delivery Expectancy/Experience Questionnaire

Measures: Personal Control

Scales: I behaved badly, I dared to totally surrender control to my body, I lost total control of myself

Scale/Item Reliability: Cronbach's a =0.67

Short-term Reliability:

Validity:

Citation:

References: Fetal Development and Postnatal Assessment

- Abel, K. M., Dalman, C., Svensson, A. C., Susser, E., Dal, H., Idring, S., ... Magnusson, C. (2013). Deviance in fetal growth and risk of autism spectrum disorder. *The American Journal of Psychiatry*, *170*(4), 391–398. <https://doi.org/10.1176/appi.ajp.2012.12040543>
- Baibazarova, E., van de Beek, C., Cohen-Kettenis, P. T., Buitelaar, J., Shelton, K. H., & van Goozen, S. H. M. (2013). Influence of prenatal maternal stress, maternal plasma cortisol and cortisol in the amniotic fluid on birth outcomes and child temperament at 3 months. *Psychoneuroendocrinology*, *38*(6), 907–915. <https://doi.org/10.1016/j.psyneuen.2012.09.015>
- Bates, J. E., & Bayles, K. (1984). Objective and subjective components in mothers' perceptions of their children from age 6 months to 3 years. *Merrill-Palmer Quarterly*, *30*(2), 111–130. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1984-22928-001&site=ehost-live>
- Bates, J.E. (1987). Temperament in infancy. In J.D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 1101-1 149). New York: Wiley.
- Christiaens, W., & Bracke, P. (2007). Assessment of social psychological determinants of satisfaction with childbirth in a cross-national perspective. *BMC pregnancy and childbirth*, *7*(1), 26.
- Coleman, P., Nelson, E. S., & Sundre, D. L. (1999). The relationship between prenatal expectations and postnatal attitudes among first-time mothers. *Journal of Reproductive and Infant Psychology*, *17*(1), 27–39. <https://doi.org/10.1080/02646839908404582>
- Contreras, J. M., Rhodes, J. E., & Mangelsdorf, S. C. (1995). Pregnant African American teenagers' expectations of their infants' temperament: Individual and social network influences. *Journal of Applied Developmental Psychology*, *16*(2), 283-295.
- Diener, M. L., Goldstein, L. H., & Mangelsdorf, S. C. (1995). The role of prenatal expectations in parents' reports of infant temperament. *Merrill-Palmer Quarterly*, *41*(2), 172–190. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1995-28943-001&site=ehost-live>
- DiPietro, J. A., Bornstein, M. H., Costigan, K. A., Pressman, E. K., Hahn, C.-S., Painter, K., ... Yi, L. J. (2002). What does fetal movement predict about behavior during the first two years of life? *Developmental Psychobiology*, *40*(4), 358–371. <https://doi.org/10.1002/dev.10025>
- Farrant, B. M., Mattes, E., Keelan, J. A., Hickey, M., & Whitehouse, A. J. O. (2013). Fetal testosterone, socio-emotional engagement and language development. *Infant and Child Development*, *22*(2), 119–132. <https://doi.org/10.1002/icd.1771>
- Galbally, M., IJzendoorn, M., Permezel, M., Saffery, R., Lappas, M., Ryan, J., ... Lewis, A. J. (2017). Mercy Pregnancy and Emotional Well-being Study (MPEWS): Understanding maternal mental health, fetal programming and child development Study design and cohort profile. *International Journal of Methods in Psychiatric Research*, *26*(4), 1–10. <https://doi.org/10.1002/mpr.1558>
- Giesbrecht, G. F., Campbell, T., & Letourneau, N. (2015). Sexually dimorphic adaptations in basal maternal stress physiology during pregnancy and implications for fetal development. *Psychoneuroendocrinology*, *56*, 168–178. <https://doi.org/10.1016/j.psyneuen.2015.03.013>

- Goodman, P., Mackey, M. C., & Tavakoli, A. S. (2004). Factors related to childbirth satisfaction. *Journal of advanced nursing*, *46*(2), 212-219.
- Hagekull, B., & Bohlin, G. (1990). Early infant temperament and maternal expectations related to maternal adaptation. *International Journal of Behavioral Development*, *13*(2), 199-214.
- Jensen, R. B., Juul, A., Larsen, T., Mortensen, E. L., & Greisen, G. (2015). Cognitive ability in adolescents born small for gestational age: Associations with fetal growth velocity, head circumference and postnatal growth. *Early Human Development*, *91*(12), 755–760.
<https://doi.org/10.1016/j.earlhumdev.2015.08.014>
- Kalmuss, D., Davidson, A., & Cushman, L. (1992). Parenting expectations, experiences, and adjustment to parenthood: A test of the violated expectations framework. *Journal of Marriage and family*, *54*(3), 516.
- Kiang, L., Moreno, A. J., & Robinson, J. L. (2004). Maternal Preconceptions About Parenting Predict Child Temperament, Maternal Sensitivity, and Children's Empathy. *Developmental Psychology*, *40*(6), 1081–1092. <https://doi.org/10.1037/0012-1649.40.6.1081>
- Koletzko, S. H., La Marca-Ghaemmaghami, P., & Brandstätter, V. (2015). Mixed expectations: Effects of goal ambivalence during pregnancy on maternal well-being, stress, and coping. *Applied Psychology: Health and Well-Being*, *7*(3), 249–274. <https://doi.org/10.1111/aphw.12047>
- Malacova, E., Li, J., Blair, E., Mattes, E., de Klerk, N., & Stanley, F. (2009). Neighbourhood socioeconomic status and maternal factors at birth as moderators of the association between birth characteristics and school attainment: A population study of children attending government schools in Western Australia. *Journal of Epidemiology and Community Health*, *63*(10), 842–849.
<https://doi.org/10.1136/jech.2008.086033>
- Mebert, C. J. (1989). Stability and change in parents' perceptions of infant temperament: Early pregnancy to 135 months postpartum. *Infant Behavior & Development*, *12*(2), 237–244.
[https://doi.org/10.1016/0163-6383\(89\)90010-6](https://doi.org/10.1016/0163-6383(89)90010-6)
- Mebert, C. J. (1991). Dimensions of subjectivity in parents' ratings of infant temperament. *Child Development*, *62*(2), 352–361. <https://doi.org/10.2307/1131008>
- Moon, C., Lagercrantz, H., & Kuhl, P. K. (2013). Language experienced in utero affects vowel perception after birth: A two-country study. *Acta Paediatrica*, *102*(2), 156–160. <https://doi.org/10.1111/apa.12098>
- Mulder, E. J. H., Ververs, F. F. T., de Heus, R., & Visser, G. H. A. (2011). Selective serotonin reuptake inhibitors affect neurobehavioral development in the human fetus. *Neuropsychopharmacology*, *36*(10), 1961–1971. <https://doi.org/10.1038/npp.2011.67>
- O'Connor, T. G., Heron, J., Golding, J., Beveridge, M., & Glover, V. (2002). Maternal antenatal anxiety and children's behavioural/emotional problems at 4 years: Report from the Avon Longitudinal Study of Parents and Children. *The British Journal of Psychiatry*, *180*(6), 502–508.
<https://doi.org/10.1192/bjp.180.6.502>

- Paguio, L. P. (1983). The influence of sex of child and parent on perceptions of the ideal child. *Child Study Journal*, 13(3), 187–194. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1984-12033-001&site=ehost-live>
- Pearce, H., & Ayers, S. (2005). The expected child versus the actual child: implications for the mother-baby bond. *Journal of Reproductive and Infant Psychology*, 23(1), 89–102. <https://doi.org/10.1080/0264683042000325528>
- Roza, S. J., Van Lier, P. A. C., Jaddoe, V. W. V., Steegers, E. A. P., Moll, H. A., Mackenbach, J. P., ... Tiemeier, H. (2008). Intrauterine growth and infant temperamental difficulties: The Generation R Study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 47(3), 264–272. <https://doi.org/10.1097/CHI.0b013e318160b3df>
- Rückinger, S., Beyerlein, A., Jacobsen, G., von Kries, R., & Vik, T. (2010). Growth in utero and body mass index at age 5 years in children of smoking and non-smoking mothers. *Early Human Development*, 86(12), 773–777. <https://doi.org/10.1016/j.earlhumdev.2010.08.027>
- Schölmerich, A., & van Aken, M. A. G. (1996). Attachment security and maternal concepts of ideal children in Northern and Southern Germany. *International Journal of Behavioral Development*, 19(4), 725–738. <https://doi.org/10.1080/016502596385541>
- Thomas, K., Harrison, G., Zammit, S., Lewis, G., Horwood, J., Heron, J., ... Gunnell, D. (2009). Association of measures of fetal and childhood growth with non-clinical psychotic symptoms in 12-year-olds: The ALSPAC cohort. *The British Journal of Psychiatry*, 194(6), 521–526. <https://doi.org/10.1192/bjp.bp.108.051730>
- Tong, Y., & Lam, S. (2011). The cost of being mother's ideal child: The role of internalization in the development of perfectionism and depression. *Social Development*, 20(3), 504–516. <https://doi.org/10.1111/j.1467-9507.2010.00599.x>
- Vasiliadis, H.-M., Gilman, S. E., & Buka, S. L. (2008). Fetal growth restriction and the development of major depression. *Acta Psychiatrica Scandinavica*, 117(4), 306–312. <https://doi.org/10.1111/j.1600-0447.2008.01168.x>
- Vedova, A. M. D. (2014). Maternal psychological state and infant's temperament at three months. *Journal of Reproductive and Infant Psychology*, 32(5), 520–534. <https://doi.org/10.1080/02646838.2014.947472>
- Weisman, C. S., Misra, D. P., Hillemeier, M. M., Downs, D. S., Chuang, C. H., Camacho, F. T., & Dyer, A.-M. (2011). Preconception predictors of birth outcomes: Prospective findings from the Central Pennsylvania Women's Health Study. *Maternal and Child Health Journal*, 15(7), 829–835. <https://doi.org/10.1007/s10995-009-0473-2>
- Whitehouse, A. J. O., Hickey, M., Stanley, F. J., Newnham, J. P., & Pennell, C. E. (2011). Brief report: A preliminary study of fetal head circumference growth in autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 41(1), 122–129. <https://doi.org/10.1007/s10803-010-1019-6>

Zeanah, C. H., Keener, M. A., Stewart, L., & Anders, T. F. (1985). Prenatal perception of infant personality: A preliminary investigation. *Journal of the American Academy of Child Psychiatry*, 24(2), 204-210.

9 Months - Child

Behavioral Observations

Infant Facial Expression

Measures: Smile, Neutral Expression, and Negative Expression (MOMINF coding of videotaped behavior)

Interrater Reliability: Kappa = .71 ($N = 80$)

Short-term Reliability: Two observations one week apart: Smile, $r = .27$ ($N = 50$); Neutral, $r = .18$ ($N = 51$); Negative, $r = .16$ ($N = 49$)

Validity: To be done

Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant Motor Skills

Measures: Highest Level Observed of Pre-locomotion, Locomotion, Sit, Stand, Walk (MOMINF coding of videotaped behavior)

Interrater Reliability: Kappas: Locomote = .96 ($N = 72$); Sit = .88 ($N = 70$); Stand = .44 ($N = 53$)

Short-term Reliability: Two observations one week apart: Pre-locomotion, $r = .46$; Locomotion, $r = .48$; Sit, $r = .74$ ($N = 48$); Stand, $r = .31$; Walk, $r = .82$

Validity: To be done

Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant Object Exploration

Measures: Number of Objects (household objects, toys, and children's books) Explored by Infant (MOMINF coding of videotaped behavior)

Interrater Reliability: ICC = .93 ($N = 76$)

Short-term Reliability: Two observations one week apart: Objects Explored, $r = .55$

Validity: To be done

Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K.

(1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant State

Measures: Asleep, Drowsy, Alert, Crying (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .93 ($N = 80$)
Short-term Reliability: Two observations one week apart ($N = 51$): Asleep, $r = .23$; Drowsy, $r = .50$; Alert, $r = .54$; Crying, $r = .02$ ($N = 49$)
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant Touch

Measures: Mouthing, Object Touch (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .68 ($N = 82$)
Short-term Reliability: Two observations one week apart ($N = 51$): Mouthing, $r = .15$; Object Touch, $r = .31$
Long-term Stability: 2-5 Months: Object Touch, $r = .09$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant Visual Attention

Measures: Look at Caregiver, Look at Object (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .68 ($N = 75$)
Short-term Reliability: Two observations one week apart: Look at Caregiver, $r = .38$ ($N = 51$); Look at Object, $r = .45$ ($N = 50$)
Long-term Stability: 2-5 Months: Look at Caregiver, $r = -.13$; Look at Object, $r = .18$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Infant Vocalization

- Measures: Distress Vocalization, Nondistress Vocalization (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappa = .72 ($N = 89$)
- Short-term Reliability: Two observations one week apart ($N = 51$): Distress, $r = .34$; Nondistress, $r = .08$ ($N = 49$)
- Long-term Stability: 2-5 Months: Distress, $r = .15$; Nondistress, $r = .29$
- Validity: To be done
- Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

9 Months - Mother

Behavioral Observations

Mother (Caregiver) Encouragement of Motor Skills

- Measures: Physical Assists to Sit and Stand, Physical Assists to Crawl, Roll, and Walk, Verbal Encouragement to Sit and Stand, Verbal Encouragement to Crawl, Roll, and Walk (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappas: Encourage Sit/Stand = .51; Encourage Roll/Crawl/Walk = .83 ($N = 75$)
- Short-term Reliability: Two observations one week apart ($N = 51$): Physical Assists to Sit and Stand, $r = .43$; Physical Assists to Crawl, Roll, and Walk, $r = -.02$; Verbal Assists to Sit and Stand, $r = .19$; Verbal Encouragement to Crawl, Roll, and Walk, $r = -.04$
- Validity: To be done
- Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Mother (Caregiver) Nurturing Activity

- Measures: Feed, Burp/wipe, Bathe, Diaper, Dress, Groom (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappa = .91 ($N = 75$)
- Short-term Reliability: Two observations one week apart ($N = 51$): Feed, $r = .53$; Burp/wipe, $r = .30$; Bathe, $r = .54$; Diaper, $r = .46$; Dress, $r = .41$; Groom, $r = .01$
- Validity: To be done
- Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

behaviors: *Short-term stability and continuity*. Unpublished Manuscript.

Mother (Caregiver) Play and Affect

Measures: Negative Affect, Positive Affect, and Social Play (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .72 ($N = 95$)
Short-term Reliability: Two observations one week apart ($N = 51$): Negative Affect, $r = -.09$; Positive Affect, $r = .60$ ($N = 50$); Social Play, $r = .52$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030. Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript

Mother (Caregiver) Vocalization

Measures: Caregiver Speech (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .69 ($N = 100$)
Short-term Reliability: Two observations one week apart ($N = 51$): Caregiver's Speech, $r = .71$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030. Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Mother (Caregiver) Encouragement of Attention

Measures: Direct Attention to Environment, Direct Attention to Self (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappa = .72 ($N = 107$)
Short-term Reliability: Two observations one week apart ($N = 51$): Attention to Environment, $r = .49$; Attention to Self, $r = .44$
Long-term Stability: 2-5 Months: Direct Attention to Environment, $r = .34$; Direct Attention to Self, $r = -.14$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030. Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

9 Months - Dyad

Behavioral Observations

Mother and Child Emotional Availability

- Measure: Emotional Availability (EA) Scales applied to mother and child interaction
- Scales: Caregiver Sensitivity, Structuring, and Non-intrusiveness; Child Responsiveness and Involvement
- Interrater Reliability: Intraclass Correlations (ICC): Maternal sensitivity, $ICC = .82$; Maternal Structuring, $ICC = .85$; Maternal Non-intrusiveness, $ICC = .82$; Child Responsiveness, $ICC = .90$; and Child Involvement, $ICC = .90$ ($N = 24$)
- Short-term Reliability: Coded from observations of 5-month-olds one week apart: for mother sensitivity $r = .61$, for mother structuring $r = .54$, for mother nonintrusiveness $r = .30$, for mother nonhostility $r = .41$, for child responsiveness $r = .50$, for child involving $r = .48$; Coded from observations of 24-month-olds one week apart: for mother sensitivity $r = .64$, for mother structuring $r = .61$, for mother nonintrusiveness $r = .31$, for mother nonhostility $r = .42$, for child responsiveness $r = .61$, for child involving $r = .58$
- Long-term Stability: EA scales showed considerable stability from 6 months to 12 months and 20 months, correlations ranged from .24 to .77
- Criterion Validity: Maternal depression when child was 1 predicted impaired maternal sensitivity when child was 4
- Citations: Biringen, Z., & Robinson, J. L. (1991). Emotional availability: A reconceptualization for research. *American Journal of Orthopsychiatry*, 61, 258-271.
Biringen, Z., Robinson, J. L. & Emde, R. N. (1998). *Emotional availability scales manual*. Colorado State University: Zeynep Biringen, Ph.D.
Bornstein, M. H., Gini, M., Suwalsky, J. T. D., Haynes, O. M., & Painter, K. M. (2005). Emotional availability in mother-child dyads: Short-term stability, continuity, and context of observation from >variable= and >person= points of view. *Merrill-Palmer Quarterly*.

9 Months - Environment

Behavioral Observations

Objects Available to Infant During Observation

- Measures: Number of Objects (household objects, toys, and children's books) Available to Infant and Mean Responsiveness of Available Objects (MOMINF coding of videotaped behavior)
- Interrater Reliability: ICCs ($N = 76$): Objects Within Reach, = .94; Mean Responsiveness = .87
- Short-term Reliability: Two observations one week apart ($N = 50$): Objects Available, $r = .38$; Responsiveness of Objects, $r = .05$
- Validity: To be done
- Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National

Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Sounds in Infant Environment

Measures: Voices/Music, Mechanical Noise (MOMINF coding of videotaped behavior)
Interrater Reliability: Kappas ($N=74$) : Voice/Music = .99; Mechanical Noise = .57
Short-term Reliability: Two observations one week apart: Voices/Music, $r = -.22$; Mechanical Sounds, $r = -.51$
Validity: To be done
Citation: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.
Bornstein, M. H., Hahn, C.-S., & Suwalsky, J. T. D (2004). *Infant and parenting behaviors: Short-term stability and continuity*. Unpublished Manuscript.

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status
Scales: Occupation rating, education rating, socioeconomic status rating
Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$
Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$
Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.
Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.
Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

1-2 Years - Child Behavioral Observations

Child-Alone Play, Child-Initiated Child Play, Mother-Initiated Child Play

- Measures: Proportion of Child's Play that is Symbolic or Nonsymbolic (based on either frequency of play bouts or duration of total play) (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappa = .70 ($N = 34$); Reliability of judgment, who Initiated Play, $r = .80$ ($N = 34$)
- Short-term Reliability: Correlation between Play in home and in lab at 24 months, 1 week apart ($N = 34$): for Child-Alone Play, $r = .30$; for Child-Initiated Play, $r = .45$; for Mother-Initiated Play, $r = .01$
- Long-term Stability: From 13 to 20 months: for Symbolic Play, $r = .20$; for Nonsymbolic Play, $r = .28$
- Validity: To be done
- Citations: Tamis-LeMonda, C. S., & Bornstein, M. H. (1991). Individual variation, correspondence, stability, and change in mother and toddler play. *Infant Behavior and Development, 14*, 143-162.

Reynell Developmental Language Scales

- Measure: Assessments of Verbal Production and Verbal Comprehension obtained from standardized procedure
- Scales: Expressive Language Scale, Verbal Comprehension Scale A
- Scale/Item Reliability: Split-half reliability for children under 2 years: Expressive Scale, $r = .90$ and $r = .93$ ($N = 100$); Comprehension Scale, $r = .81$ and $r = .91$ ($N = 100$)
- Short-term Reliability: Not available
- Validity: For British 4-5 year-olds, correlation with Stanford-Binet: Verbal Comprehension, $r = .73$ and Verbal Expression, $r = .61$; with WPPSI Vocabulary, Verbal Comprehension, $r = .67$ and Verbal Expression, $r = .68$
- Citations: Reynell, J. K., & Gruber, C. P. (1990). *Reynell Developmental Language Scales manual, U.S. edition*. Los Angeles, CA: Western Psychological Services.

Vineland Adaptive Behavior Scales (Parent Report)

- Measures: Standard Scores in 4 Domains of Adaptive Behavior
- Scales: Communication, Daily Living, Socialization, and Motor
- Tester Reliability: Interrater intraclass correlation = .98 ($N = 644$); Same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)
- Scale/Item Reliability: Split-half reliability at 20 and 48 months = .96 ($N = 484$)
- Short-term Reliability: Test-Retest intraclass correlation = .98 ($N = 644$)
- Validity: Correlation of Vineland composite and ABIC average scale score, $r = .58$; Correlation of Vineland composite and 5 scales of Kaufman ABC, $r = .25$ to .37
- Citations: Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales survey form manual (Interview edition)*. Circle Pines, Minnesota: American Guidance Service.

1-2 Years - Mother Behavioral Observations

Mother Play with Child (Demonstrations)

- Measures: Proportion of Mother's Play that is Symbolic or Nonsymbolic (based on either frequency of play bouts or duration of total play) (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappa = .70 ($N = 15$)
- Short-term Reliability: Play in home and in lab at 24 months, 1 week apart, $r = .41$ ($N = 34$)
- Long-term Stability: From 13 to 20 Months, $r = .53$
- Validity: To be done
- Citations: Tamis-LeMonda, C. S., & Bornstein, M. H. (1991). Individual variation, correspondence, stability, and change in mother and toddler play. *Infant Behavior and Development, 14*, 143-162.

Mother Solicitations of Play

- Measures: Proportion of Mother's Play Solicitations that are Symbolic or Nonsymbolic (based on frequency of play solicitations) (MOMINF coding of videotaped behavior)
- Interrater Reliability: Intraclass correlation = .90
- Short-term Reliability: To be done
- Long-term Stability: From 13 to 20 Months, $r = .33$
- Validity: To be done
- Citations: Tamis-LeMonda, C. S., & Bornstein, M. H. (1991). Individual variation, correspondence, stability, and change in mother and toddler play. *Infant Behavior and Development, 14*, 143-162.

Mother Social Play and Mother Positive Affect

- Measures: Social Play, Physical Affection, Positive Evaluation (MOMINF coding of videotaped behavior)
- Interrater Reliability: Kappa (Social Play) = .88; Kappa (Physical Affection); Intraclass Correlation (Positive Evaluation) = .90 ($N = 30$)
- Short-term Reliability: To be done
- Validity: To be done
- Citations: Bornstein, M. H., Suwalsky, J. T. D., Ludemann, P., Painter, K., & Shulthess, K. (1991). *Manual for observation and analysis of infant development and mother-infant interaction in the first four years of life*. Child and Family Research, National Institute of Child Health and Human Development, Bethesda MD 20892-2030.

1-2 Years - Mother Inventory/Questionnaire

Jackson Personality Inventory

- Measures:** Maternal Personality
- Scales:** Anxiety, Breadth of Interest, Conformity, Energy Level, Innovation, Interpersonal Affect, Organization, Responsibility, Self Esteem, Social Participation, Value Orthodoxy
- Scale/Item Reliability:** In two studies, median internal consistency reliabilities (Bentler's Theta) were .90 and .93.
- Short-term Reliability:** Not available
- Validity:** Median correlations with Adjective Checklist, Self-Rating, and Peer Rating are .70, .56, and .38, respectively.
- Citations:** Jackson, D. N. (1976). *Jackson Personality Inventory: Manual*. Port Huron, MI: Research Psychologists Press, Div. Sigma Assessment Systems

Knowledge of Infant Development Inventory

- Measures:** Maternal Knowledge of Infant Development
- Scales:** Knowledge of Norms Development, Principles of Infant Development, Knowledge of Parenting, Knowledge of Infant Health and Safety, and Total Knowledge (Total Correct, Total Attempted, Total Accurate)
- Scale/Item Reliability:** Cronbach's Alpha = .82 ($N = 226$) for mothers. Cronbach's Alpha = .67 ($N = 256$) for a sample selected to be representative with respect to age and SES. Split-half reliability for mothers, $r = .85$
- Short-term Reliability:** Test-retest (2 weeks) for mothers ($N = 58$): Total Correct, $r = .92$; Attempted, $r = .90$; Accuracy, $r = .91$. For the representative sample ($N = 256$), $r = .74$.
- Validity:** Correlation with Epstein, $r = .41$. College students scored the lowest total correct; mothers had the next lowest total correct; professionals had the highest; pediatricians had highest on health and safety; developmental psychologists had highest scores on principles of development.
- Citations:** MacPhee, D. (1981). *Manual: Knowledge of Infant Development Inventory*. Unpublished manuscript. University of North Carolina.

Parental Attributions Questionnaire

- Measures:** Explanations of Parental Failure and Success
- Scales:** External Attributions (Difficulty, Luck) and Internal Attributions (Ability, Effort, Mood) for Failure and for Success
- Scale/Item Reliability:** Correlations of explanations ($N = 42$): Difficulty and Luck as explanations for success, $r = .82$; Difficulty and Luck as explanations for failure, $r = .64$; Effort and Ability as explanations for success, $r = .67$; Effort and Mood as explanations for failure, $r = .51$
- Short-term Reliability:** Not available
- Validity:** Correlation of Competence scale from the Self-Perception of Parental Role with Internal/Success, $r = .62$, with External/Failure, $r = .37$, and with External/Success, $r = .45$
- Citations:** MacPhee, D., Seybold, J, & Fritz, J. (1989). *Parental attributions and self-esteem among mothers of delayed children*. Unpublished manuscript. Colorado State University.

Parental Style Questionnaire

Measures: Mother's Perception of her own and her husband's Actual Parenting Style, the Ideal Style, and the Discrepancy between their actual and the ideal style

Scales: Three Parenting Domains: Social Exchange, Didactic/Material, and Limit Setting
Scale/Item Reliability: An independent sample of 222 U.S. mothers of 20-month-olds confirmed the formation of three factors. Cronbach's alpha coefficients for the social, didactic/material, and limit setting scales were .64, .62, and .66, respectively.

Short-term Reliability: To be done

Validity: To be done

Citations: Bornstein, M.H., Tamis-LeMonda, C.S., Pascual, L., Haynes, O.M., Painter, K., Galperin, C., & Pecheux, M.G. (1996). Ideas about parenting in Argentina, France, and the United States. *International Journal of Behavioral Development, 19*, 347-367.

Self-Perception of the Parental Role

Measures: Perceived Parenting Ability

Scales: Investment in Parental Role, Integration of Parenting and Working Role, Competence in Parental Role, Satisfaction in Parenting

Scale/Item Reliability: Cronbach's Alphas = .72, .76, .78, .80, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 373$)

Short-term Reliability: Test-retest (21-day) Reliabilities: $r = .82, .92, .86, \text{ and } .88$, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 53$ mothers of 18-month-old infants)

Validity: Scales show small, complex, significant relationships with measures of previous experience with infants, social networking, adult self esteem

Citations: MacPhee, D., Benson, J., & Bullock, D. (1986). *Influences on maternal self perception*. Poster presented at the International Conference on Infant Studies, Los Angeles, CA.

1-2 Years - Mother

Standardized Procedure

Peabody Picture Vocabulary Test-Revised (Form L)

Measures: Maternal Verbal-Perceptual Intelligence

Tester Reliability: Not available

Scale/Item Reliability: Split-half reliability for adults, $r = .88$ ($N = 95$)

Short-term Reliability: Median 9-31 day alternate forms reliability across all age groups, $r = .77$, range = .54 to .90 ($N = 962$)

Long-term Stability: Not available. (For "average" children, reliability values were in the "high .70's")

Validity: Median correlations of PPVT with full IQ scale scores from: Stanford Binet, $r = .62$; WISC, $r = .64$; WAIS, $r = .72$; WPPSI, $r = .58$

Citations: Dunn, L. M., & Dunn, L. M. (1981). *Peabody Picture Vocabulary Test - Revised: Manual for Forms L and M*. Circle Pines, MN: American Guidance Service.

1-2 Years - Dyad

Behavioral Observations

Mother and Child Emotional Availability

- Measure: Emotional Availability (EA) Scales applied to mother and child interaction during play
- Scales: Caregiver Sensitivity, Structuring, and Non-intrusiveness; Child Responsiveness and Involvement
- Interrater Reliability: Intraclass Correlations (ICC): Maternal sensitivity, $ICC = .82$; Maternal Structuring, $ICC = .85$; Maternal Non-intrusiveness, $ICC = .82$; Child Responsiveness, $ICC = .90$; and Child Involvement, $ICC = .90$ ($N = 24$)
- Short-term Reliability: Coded from observations of 5-month-olds one week apart: for mother sensitivity $r = .61$, for mother structuring $r = .54$, for mother nonintrusiveness $r = .30$, for mother nonhostility $r = .41$, for child responsiveness $r = .50$, for child involving $r = .48$; Coded from observations of 24-month-olds one week apart: for mother sensitivity $r = .64$, for mother structuring $r = .61$, for mother nonintrusiveness $r = .31$, for mother nonhostility $r = .42$, for child responsiveness $r = .61$, for child involving $r = .58$
- Long-term Stability: EA scales showed considerable stability from 6 months to 12 months and 20 months, correlations ranged from .24 to .77
- Criterion Validity: Maternal depression when child was 1 predicted impaired maternal sensitivity when child was 4
- Citations: Biringen, Z., & Robinson, J. L. (1991). Emotional availability: A reconceptualization for research. *American Journal of Orthopsychiatry*, *61*, 258-271.
Biringen, Z., Robinson, J. L. & Emde, R. N. (1998). *Emotional availability scales manual*. Colorado State University: Zeynep Biringen, Ph.D.
Bornstein, M. H., Gini, M., Suwalsky, J. T. D., Haynes, O. M., & Painter, K. M. (2005). Emotional availability in mother-child dyads: Short-term stability, continuity, and context of observation from >variable= and >person= points of view. *Merrill-Palmer Quarterly*.

Mother and Child Language

- Measure: Linguistic analysis of mother and child joint picture book reading using CHAT
- Scales: Total number of complete and intelligible utterances, total number of declarative, question, and exclamatory utterances, MLU, Type-token ratio, and number of different word roots.
- Interrater Reliability: Not applicable. Transcripts are typed verbatim and checked by a second assistant. Then the MOR and POST procedures are used to automatically do morphosyntactic coding. The transcripts are then checked for coding errors.
- Short-term Reliability: To be done
- Validity: To be done
- Citations: Bornstein, M. H., Haynes, M. O., & Painter, K. M. (1998). Sources of child vocabulary competence: A multivariate model. *Journal of Child Language*, *25*, 367-393.
MacWhinney, B. (2000). *The CHILDES Project: Tools for analyzing talk*. Mahwah, NJ: Erlbaum.

1-2 Years - Environment Inventory/Questionnaire

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status

Scales: Occupation rating, education rating, socioeconomic status rating

Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$

Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$

Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.
Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.
Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

3 Years - Child Inventory/Questionnaire

Preschool Behavior Questionnaire (Parent Report)

- Measure: Maternal Ratings of Child Problem Behaviors
Scales: Hostile-Aggressive Behavior, Anxious Behavior, Hyperactive-Distractible Behavior, Disturbed Behavior, and Total Score (sum of above subscales)
Alternative scaling: Internalizing and externalizing behavior problems
Interrater Reliability: Teacher and teacher aide ratings, $r = .84$ ($N = .89$)
Scale/Item Reliability: Cronbach's alpha reliability for the externalizing scale = .81 and for the internalizing scale = .62 ($N = 285$)
Short-term Reliability: Not available
Long-term Stability: Test-retest reliability, 3-4 months apart, $r = .87$
Validity: Discriminated between normal ($N = 496$) and disturbed children ($N = 102$); Factor analysis yielded 3 factors: Hostile, Fearful, & Hyperactive
Citations: Behar, L. & Stringfield, S. (1974). A behavior rating scale for the preschool child. *Developmental Psychology, 10*, 601-610.
Trembley, R. E., Desmarais-Gervais, L., Gagnon, C., & Charlebois, P. (1987). The preschool behaviour questionnaire: Stability of its factor structure between cultures, sexes, ages, and socioeconomic classes. *International Journal of Behavioral Development, 10*, 467-484.

3 Years - Child Standardized Procedure

Draw-A-Person Test (McCarthy Scales of Children's Abilities)

- Measures: Fine motor control, perception, and cognition
Scale: Draw-A-Person Scale
Interrater Reliability: Intraclass correlations range from .95 to .98 for 6 coders ($N = 5 - 15$)
Scale/Item Reliability: Split half reliability for Motor Scale, $r = .78$ at 48 months ($N = 102$)
Short-term Reliability: Test-retest reliability for Motor Scale, 1 month interval: at 3.5 years, $r = .78$ ($N = 40$); at 5.5 years, $r = .75$ ($N = 40$)
Criterion Validity: Motor scale correlates with the General Cognitive component of McCarthy's scales (after removing the shared scales) in 4-year-olds, $r = .26$ ($N = 102$)
Citations: McCarthy, D. (1972). *Manual for the McCarthy scales of children's abilities*. The Psychological Corporation. Harcourt Brace Jovanovich, Inc.

Pictorial Scale of Perceived Competence & Social Acceptance

- Measures: Child's perception of competence and acceptance
Scales: Cognitive Competence, Physical Competence, Peer Acceptance, Maternal Acceptance
Interrater Reliability: Child (K - 2nd grade) and teacher ratings, $r = .06$ to .37 for the different scales
Scale/Item Reliability: Cronbach's alphas: Cognitive Competence = .71, Physical Competence = .66, Peer Acceptance = .74, Maternal Acceptance = .85, Total = .89

Short-term Reliability: Not available

Discriminant Validity: The Cognitive Competence scale differentiated children who passed and failed 1st grade ($N = 24$); the Peer social Acceptance scale differentiated children who had recently moved from children who had not ($N = 20$); the Physical Competence scale differentiated preschoolers who were born prematurely from those who were full term ($N = 16$)

Citations: Harter, S. & Pike, R. (1984). The pictorial scale of perceived competence and social acceptance for young children. *Child Development*, 55, 1969-1982.

Vineland Adaptive Behavior Scales (Parent Report)

Measures: Mother's report of child's current level of adjustment and functioning

Scales: Communication, Daily Living, Socialization, and Motor

Interrater Reliability: Intraclass correlation = .98 ($N = 644$); Same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)

Scale/Item Reliability: Split-half reliability at 20 and 48 months = .96 ($N = 484$)

Short-term Reliability: Test-Retest, 2 - 4 weeks apart, intraclass correlation = .98 ($N = 644$)

Validity: Correlation of Vineland composite and ABIC average scale score = .58 ($N = 39$); and 5 scales of Kaufman ABC = .25 to .37

Citations: Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales survey form manual (Interview edition)*. Circle Pines, Minnesota: American Guidance Service.

Weschler Preschool & Primary Scale of Intelligence, Revised

Measures: Child's verbal and performance intelligence

Scales: Performance IQ (PIQ), Verbal IQ (VIQ), Full Scale IQ (FIQ)

Interrater Reliability: Intraclass correlation on five subtests: $r = .88$ to .96

Scale/Item Reliability: Split-half: PIQ = .92, VIQ = .95, FSIQ = .96

Short-term Reliability: PIQ = .88, VIQ = .90, FSIQ = .91

Validity: Correlations of FSIQ with WISC & Stanford Binet: 10 studies, $r = .45$ to .85 ($N = 42$)

Citations: Sattler, J. M. (1988). *Assessment of children (3rd ed.)*. San Diego, CA: Jerome M. Sattler, Publisher, Inc.

Wechsler, D. (1989). *Wechsler preschool and primary scale of intelligence Revised: Manual*. The Psychological Corporation. Harcourt, Brace Jovanich, Inc.

Storytelling: Narrative Analysis

Measure: Narrative analysis of child's story about a Bear Family.

Scales: Total on-task propositions, Highest total on-task propositions, Narrative cohesion, Narrative duration, Narrative structure, and overall narrative score.

Interrater Reliability: Intraclass correlations ranged from .82 to .97 for the overall narrative score for 5 coders ($N = 10 - 18$).

Short-term Reliability: In an independent sample of $N = 24$ children, 1-week test-retest reliability was $r = .68$, $p < .001$.

Convergent Validity: In a sample of 285 4-year-olds, the overall narrative score was correlated $r = .44$, $p < .001$ with mean length of utterance and $r = .70$, $p < .001$ with the number of different word roots produced by the child in the storytelling task.

Discriminant Validity: In a sample of 285 4-year-olds, the overall narrative score was unrelated to the the WPPSI-R picture completion and block design subscales.

- Citations: Botvin, G. J., & Sutton-Smith, B. (1977). The development of structural complexity in children's fantasy narratives. *Developmental Psychology, 13*, 377-388.
- Fein, G. G. (1995). Toys and stories. In A. D. Pellegrini (Ed.) *The future of play theory*. New York: State University of New York Press.
- Morrow, L. M. (1986). Effects of structural guidance in story retelling on children's dictation of original stories. *Journal of Reading Behavior, 18*, 135-152.

Storytelling: Language

- Measure: Linguistic analysis of mother and child joint picture book reading using CHAT
- Scales: Total number of complete and intelligible utterances, total number of declarative, question, and exclamatory utterances, MLU, Type-token ratio, and number of different word roots.
- Interrater Reliability: Not applicable. Transcripts are typed verbatim and checked by a second assistant. Then the MOR and POST procedures are used to automatically do morphosyntactic coding. The transcripts are then checked for coding errors.
- Short-term Reliability: In an independent sample of $N = 24$ children, 1-week test-retest reliability was $r = .77$, $p < .001$ for mean length of utterance, and $r = .70$, $p < .001$ for the number of different word roots produced.
- Convergent Validity: In a sample of 285 4-year-olds, mean length of utterance was correlated $r = .22$, $p < .001$ with the WPPSI-R verbal information subscale and $r = .17$, $p < .001$ with the WPPSI-R verbal similarities subscale.
- Discriminant Validity: In a sample of 285 4-year-olds, mean length of utterance was to the picture completion subscale of the WPPSI-R.
- Citations: Bornstein, M. H., Haynes, M. O., & Painter, K. M. (1998). Sources of child vocabulary competence: A multivariate model. *Journal of Child Language, 25*, 367-393.
- MacWhinney, B. (2000). *The CHILDES Project: Tools for analyzing talk*. Mahwah, NJ: Erlbaum.

3 Years - Mother

Inventory/Questionnaire

Activity Diary

- Measures: Child's activities, location of activities, people engaged in activity
- Scales: Activity variability, situational variability, social variability
- Scale/Item Reliability: Not applicable
- Short-term Reliability: Not available
- Validity: To be done
- Citations: *Activity Diary*. Unpublished questionnaire. Bethesda, MD: National Institutes of Health

Maternal Perceived Stress Scale

- Measure: Appraisal of Stressfulness of current life situation
- Scale/Item Reliability: Cronbach's alphas = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)
- Short-term Reliability: 2 day span in undergraduates, $r = .85$ ($N = 82$)

Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)
 Validity: Correlated with Impact of Life Events, $r = .24$ to $.49$; Depression, $r = .65$ to $.76$;
 Physical Symptoms, $r = .52$ to $.65$; Social Anxiety, $r = .37$ to $.48$
 Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

3 Years - Dyad

Behavioral Observation

Mother-Child Interaction

Measures: Mother and child joint Draw-Your-House, mother-child book reading, mother-child puzzle building.

Scales: Caregiver Sensitivity, Structuring, and Non-intrusiveness; Child Responsiveness and Involvement

Interrater Reliability: To be done.

Short-term Reliability: Coded from observations of 5-month-olds one week apart: for mother sensitivity $r = .61$, for mother structuring $r = .54$, for mother nonintrusiveness $r = .30$, for mother nonhostility $r = .41$, for child responsiveness $r = .50$, for child involving $r = .48$;
 Coded from observations of 24-month-olds one week apart: for mother sensitivity $r = .64$, for mother structuring $r = .61$, for mother nonintrusiveness $r = .31$, for mother nonhostility $r = .42$, for child responsiveness $r = .61$, for child involving $r = .58$

Long-term Stability: EA scales showed considerable stability from 6 months to 12 months and 20 months, r ranged from $.24$ to $.77$

Criterion Validity: Maternal depression when child was 1 predicted impaired maternal sensitivity when child was 4.

Citations: Biringen, Z., & Robinson, J. L. (1991). Emotional availability: A reconceptualization for research. *American Journal of Orthopsychiatry*, 61, 258-271.
 Biringen, Z., Robinson, J. L. & Emde, R. N. (1998). *Emotional availability scales manual*. Colorado State University: Zeynep Biringen, Ph.D.
 Bornstein, M. H., Gini, M., Suwalsky, J. T. D., Haynes, O. M., & Painter, K. M. (2005). Emotional availability in mother-child dyads: Short-term stability, continuity, and context of observation from >variable= and >person= points of view. *Merrill-Palmer Quarterly*.

3 Years – Environment

Inventory/Questionnaire

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status

Scales: Occupation rating, education rating, socioeconomic status rating

Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$

Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$

Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.

Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.

Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

Social Network Form

Measures: Maternal ratings of social contacts, emotional support, parenting support, help with child care and household chores, and satisfaction with the amount of support

Scales: Frequency of social contacts, Frequency of emotional support, Value of support, Practical help received, Satisfaction with support

Scale/Item Reliability: Cronbach's alphas for the five scales = .65 to .95

Short-term Reliability: Test-retest reliability at 2-3 weeks on 5 scales were .67, .89, .44, .98, and .91, respectively

Validity: Measures of emotional support and parenting support discriminated between 14 single and 14 married mother-child pairs

Citations: Weinraub, M., & Wolf, B.M. (1983). Effects of stress and social supports on mother-child interactions in single- and two-parent families. *Child Development*, 54, 1297-1311.

5 Years - Child

Standardized Procedure

Draw-A-Person Test (McCarthy Scales of Children's Abilities)

- Measures: Fine motor control, perception, and cognition
Scale: Draw-A-Person Scale
Interrater Reliability: Intraclass correlations range from .95 to .98 for 6 coders ($N = 5 - 15$)
Scale/Item Reliability: Split half reliability for Motor Scale, $r = .78$ at 48 months ($N = 102$)
Short-term Reliability: Test-retest reliability for Motor Scale, 1 month interval: at 3.5 years, $r = .78$ ($N = 40$); at 5.5 years, $r = .75$ ($N = 40$)
Criterion Validity: Motor scale correlates with the General Cognitive component of McCarthy's scales (after removing the shared scales) in 4-year-olds, $r = .26$ ($N = 102$)
Citations: McCarthy, D. (1972). *Manual for the McCarthy scales of children's abilities*. The Psychological Corporation. Harcourt Brace Jovanovich, Inc.

Pictorial Scale of Perceived Competence & Social Acceptance

- Measures: Child's perception of competence and acceptance
Scales: Cognitive Competence, Physical Competence, Peer Acceptance, Maternal Acceptance
Interrater Reliability: Child (K - 2nd grade) and teacher ratings, $r = .06$ to $.37$ for the different scales
Scale/Item Reliability: Cronbach's alphas: Cognitive Competence = $.71$, Physical Competence = $.66$, Peer Acceptance = $.74$, Maternal Acceptance = $.85$, Total = $.89$
Short-term Reliability: Not available
Discriminant Validity: The Cognitive Competence scale differentiated children who passed and failed 1st grade ($N = 24$); the Peer social Acceptance scale differentiated children who had recently moved from children who had not ($N = 20$); the Physical Competence scale differentiated preschoolers who were born prematurely from those who were full term ($N = 16$)
Citations: Harter, S. & Pike, R. (1984). The pictorial scale of perceived competence and social acceptance for young children. *Child Development*, 55, 1969-1982.

Vineland Adaptive Behavior Scales (Parent Report)

- Measures: Mother's report of child's current level of adjustment and functioning
Scales: Communication, Daily Living, Socialization, and Motor
Interrater Reliability: Intraclass correlation = $.98$ ($N = 644$); Same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)
Scale/Item Reliability: Split-half reliability at 20 and 48 months = $.96$ ($N = 484$)
Short-term Reliability: Test-Retest, 2 - 4 weeks apart, intraclass correlation = $.98$ ($N = 644$)
Validity: Correlation of Vineland composite and ABIC average scale score = $.58$ ($N = 39$); and 5 scales of Kaufman ABC = $.25$ to $.37$
Citations: Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales survey form manual (Interview edition)*. Circle Pines, Minnesota: American Guidance Service.

Weschler Preschool & Primary Scale of Intelligence, Revised

- Measures: Child's verbal and performance intelligence
Scales: Performance IQ (PIQ), Verbal IQ (VIQ), Full Scale IQ (FIQ)

Interrater Reliability: Intraclass correlation on five subtests: $r = .88$ to $.96$
 Scale/Item Reliability: Split-half: PIQ = $.92$, VIQ = $.95$, FSIQ = $.96$
 Short-term Reliability: PIQ = $.88$, VIQ = $.90$, FSIQ = $.91$
 Validity: Correlations of FSIQ with WISC & Stanford Binet: 10 studies, $r = .45$ to $.85$ ($N = 42$)
 Citations: Sattler, J. M. (1988). *Assessment of children (3rd ed.)*. San Diego, CA: Jerome M. Sattler, Publisher, Inc.
 Wechsler, D. (1989). *Wechsler preschool and primary scale of intelligence* Brevised: *Manual*. The Psychological Corporation. Harcourt, Brace Jovanich, Inc.

Storytelling: Narrative Analysis

Measure: Narrative analysis of child's story about a Bear Family.
 Scales: Total on-task propositions, Highest total on-task propositions, Narrative cohesion, Narrative duration, Narrative structure, and overall narrative score.
 Interrater Reliability: Intraclass correlations ranged from $.82$ to $.97$ for the overall narrative score for 5 coders ($N = 10 - 18$).
 Short-term Reliability: In an independent sample of $N = 24$ children, 1-week test-retest reliability was $r = .68$, $p < .001$.
 Convergent Validity: In a sample of 285 4-year-olds, the overall narrative score was correlated $r = .44$, $p < .001$ with mean length of utterance and $r = .70$, $p < .001$ with the number of different word roots produced by the child in the storytelling task.
 Discriminant Validity: In a sample of 285 4-year-olds, the overall narrative score was unrelated to the the WPPSI-R picture completion and block design subsclaes.
 Citations: Botvin, G. J., & Sutton-Smith, B. (1977). The development of structural complexity in children's fantasy narratives. *Developmental Psychology*, *13*, 377-388.
 Fein, G. G. (1995). Toys and stories. In A. D. Pellegrini (Ed.) *The future of play theory*. New York: State University of New York Press.
 Morrow, L. M. (1986). Effects of structural guidance in story retelling on children's dictation of original stories. *Journal of Reading Behavior*, *18*, 135-152.

Storytelling: Language

Measure: Linguistic analysis of mother and child joint picture book reading using CHAT
 Scales: Total number of complete and intelligible utterances, total number of declarative, question, and exclamatory utterances, MLU, Type-token ratio, and number of different word roots.
 Interrater Reliability: Not applicable. Transcripts are typed verbatim and checked by a second assistant. Then the MOR and POST procedures are used to automatically do morphosyntactic coding. The transcripts are then checked for coding errors.
 Short-term Reliability: In an independent sample of $N = 24$ children, 1-week test-retest reliability was $r = .77$, $p < .001$ for mean length of utterance, and $r = .70$, $p < .001$ for the number of different word roots produced.
 Convergent Validity: In a sample of 285 4-year-olds, mean length of utterance was correlated $r = .22$, $p < .001$ with the WPPSI-R verbal information subscale and $r = .17$, $p < .001$ with the WPPSI-R verbal similarities subscale.
 Discriminant Validity: In a sample of 285 4-year-olds, mean length of utterance was to the picture completion subscale of the WPPSI-R.
 Citations: Bornstein, M. H., Haynes, M. O., & Painter, K. M. (1998). Sources of child vocabulary competence: A multivariate model. *Journal of Child Language*, *25*, 367-393.
 MacWhinney, B. (2000). *The CHILDES Project: Tools for analyzing talk*. Mahwah,

NJ: Erlbaum.

5 Years - Mother Inventory/Questionnaire

Activity Diary

Measures: Child's activities, location of activities, people engaged in activity
Scales: Activity variability, situational variability, social variability
Scale/Item Reliability: Not applicable
Short-term Reliability: Not available
Validity: To be done
Citations: *Activity Diary*. Unpublished questionnaire. Bethesda, MD: National Institutes of Health

Maternal Perceived Stress Scale

Measure: Appraisal of Stressfulness of current life situation
Scale/Item Reliability: Cronbach's alphas = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)
Short-term Reliability: 2 day span in undergraduates, $r = .85$ ($N = 82$)
Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)
Validity: Correlated with Impact of Life Events, $r = .24$ to .49; Depression, $r = .65$ to .76; Physical Symptoms, $r = .52$ to .65; Social Anxiety, $r = .37$ to .48
Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

5 Years - Dyad Behavioral Observation

Mother-Child Interaction

Measures: Mother and child joint Draw-Your-House, mother-child book reading, mother-child puzzle building.
Scales: Caregiver Sensitivity, Structuring, and Non-intrusiveness; Child Responsiveness and Involvement
Interrater Reliability: To be done.
Short-term Reliability: Coded from observations of 5-month-olds one week apart: for mother sensitivity $r = .61$, for mother structuring $r = .54$, for mother nonintrusiveness $r = .30$, for mother nonhostility $r = .41$, for child responsiveness $r = .50$, for child involving $r = .48$; Coded from observations of 24-month-olds one week apart: for mother sensitivity $r = .64$, for mother structuring $r = .61$, for mother nonintrusiveness $r = .31$, for mother nonhostility $r = .42$, for child responsiveness $r = .61$, for child involving $r = .58$
Long-term Stability: EA scales showed considerable stability from 6 months to 12 months and 20 months, r ranged from .24 to .77
Criterion Validity: Maternal depression when child was 1 predicted impaired maternal sensitivity when child was 4.
Citations: Biringen, Z., & Robinson, J. L. (1991). Emotional availability: A reconceptualization

for research. *American Journal of Orthopsychiatry*, 61, 258-271.
 Biringen, Z., Robinson, J. L. & Emde, R. N. (1998). *Emotional availability scales manual*. Colorado State University: Zeynep Biringen, Ph.D.
 Bornstein, M. H., Gini, M., Suwalsky, J. T. D., Haynes, O. M., & Painter, K. M. (2005). Emotional availability in mother-child dyads: Short-term stability, continuity, and context of observation from >variable= and >person= points of view. *Merrill-Palmer Quarterly*.

5 Years - Environment Inventory/Questionnaire

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status
 Scales: Occupation rating, education rating, socioeconomic status rating
 Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$
 Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$
 Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.
 Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.
 Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

Social Network Form

Measures: Maternal ratings of social contacts, emotional support, parenting support, help with child care and household chores, and satisfaction with the amount of support
 Scales: Frequency of social contacts, Frequency of emotional support, Value of support, Practical help received, Satisfaction with support
 Scale/Item Reliability: Cronbach's alphas for the five scales = .65 to .95
 Short-term Reliability: Test-retest reliability at 2-3 weeks on 5 scales were .67, .89, .44, .98, and .91, respectively
 Validity: Measures of emotional support and parenting support discriminated between 14 single and 14 married mother-child pairs
 Citations: Weinraub, M., & Wolf, B.M. (1983). Effects of stress and social supports on mother-child interactions in single- and two-parent families. *Child Development*, 54, 1297-1311.

7 Years - Child Inventory/Questionnaire

Child Behavior Checklist (Parent Report)

- Measure: Mother's rating of children's competencies and behavioral/emotional problems
- Scales: Three competence scales (Activities, Social, School); Total competence; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
- Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .88
- Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability, $r = .93$
- Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$
- Convergent Validity: Significant correlations with corresponding scales of Conners (1973) and Quay-Peterson (1987) instruments.
- Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Child Behavior Checklist B Teacher Report Form

- Measure: Teachers' rating of children's academic performance, adaptive functioning, and behavioral/emotional problems
- Scales: Academic Performance; Adaptive Functioning; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
- Interrater Reliability: Agreement between pairs of teachers, $r = .60$
- Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .91
- Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability of $r = .92$
- Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$
- Convergent Validity: Significant r s with corresponding scales of Conners Revised Teacher Rating Scale (Goyette, Conners, & Ulrich, 1978).
- Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Child Rating Questionnaire (Parent & Teacher Reports)

- Measure: Mother's and teacher's rating of child's helpfulness, sharing behavior, cooperativeness, empathy, and emotional expressiveness
- Scales: Helpfulness, Sharing Behavior, Cooperativeness, Empathy, Emotional Expressiveness
- Scale/Item Reliability: Cronbach's alpha for parents = .80 for helpfulness, .34 for sharing behavior, .79 for cooperative behavior, .65 for emotional expressiveness; Cronbach's alpha for teachers = .84 for helpfulness, .85 for sharing behavior, .85 for cooperative behavior, .74 for empathy, .78 for emotional expressiveness
- Short-term Stability: Not available

Validity: Not available
 Citations: Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development*, 67, 449-470.
 Weir, K., Stevenson, J., & Graham, P. (1980). Behavioral deviance and teacher ratings of prosocial behavior. *Journal of the American Academy of Child Psychiatry*, 19, 68-77.
 Buck, R. (1977). Nonverbal communication accuracy in preschool children: Relationships with personality and skin conductance. *Journal of Personality and Social Psychology*, 35, 225-236.
 Strayer, J. (1985, August). *Children's affect and empathy in response to TV dramas*. Paper presented at the meeting of the American Psychological Association, Los Angeles, CA.

Children's Competence Beliefs and Subjective Task Values (Child, Parent & Teacher Reports)

Measure: Child's, parent's, and teacher's beliefs about child's competencies in math, reading, instrumental music, and sport and child's subjective task values
 Scales: Math, music, reading, sports competencies
 Scale/Item Reliability: Internal consistency reliability ranges from .90 to .96 for mother version, .74 to .90 across domains for child version, and .82 to .92 for teacher version. Reliability for competence belief scales range from .67 to .78 for first-graders, from .76 to .82 for second-graders, from .72 to .82 for fourth-graders. Reliability for subjective task value scales range from .53 to .76 for first-graders, from .62 to .83 for second-graders, from .70 to .86 for fourth-graders
 Discriminant Validity: Consistent, interpretable factors reflect discriminations across activity domains and between constructs within domains
 Predictive Validity: Consistent grade differences (for all activities except sports, younger children's perceptions of competence and subjective task values were more positive than the beliefs of older children) and gender differences (boys had more positive competence beliefs and values than did girls for sport activities, and more positive competence beliefs for mathematics; girls had more positive competence beliefs and values than did boys for reading and music activities) with theoretical predictions and previous empirical findings drawn from studies with older children
 Citations: Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A Theoretical analysis. *Developmental Review*, 12, 265-310.
 Eccles, J., Wigfield, A., Harold, R., & Blumenfeld, P. (1993) Age and gender difference in children's self- and task perceptions during elementary school. *Child Development*, 64, 830- 847.

Children's Depression Inventory

Measure: How often child has experienced symptoms of depression in past 2 weeks
 Scales: Negative mood, interpersonal problems, ineffectiveness, anhedonia, negative self-esteem
 Scale/Item Reliability: Cronbach's alpha =.86 for Total CDI score; range from .59 to .68 for factor scales
 Short-term Stability: Test-retest reliability acceptable over 2-week period, according to author
 Validity: Not available
 Citations: Kovac, M., & Beck, A.T. (1977). An empirical-clinical approach toward a definition of childhood depression. In J. Schullerbrandt & A. Raskin (Eds.), *Depression in childhood: Diagnosis, treatment, and conceptual models*. New York: Raven Press.

Children's Occupation, Activity and Trait Measures

- Measure: Children's sex-typed beliefs about others and self
- Scales: Attitude Measure and Personal Measure for Occupation, Activity, and Trait
- Factors: Gender, attitudes, masculine self, feminine self, feminine & masculine occupations, activities, and traits for self and others
- Scale/Item Reliability: Cronbach's alpha ranges from .67 to .87 for all subscales; Guttman split-half reliability ranges from .63 to .85
- Long-term Stability: One-year test-retest correlations range from .71 to .82
- Validity: Not available
- Citations: Bigler, R. S., Liben, L. S., Lobliner, D. B., & Yekel, C. A. (1995). *The structure of gender schemata: Conceptual and empirical relations among gender constructs in children and adults*. Unpublished manuscript.

Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire (Parent Report)

- Measure: Mother's perception of the child's feelings towards certain risky activities and behaviors, mother's perception of and concerns about the health status of the child and other family members.
- Scales: Risk Illness, Risk Injury, Health Beliefs and Ideas
- Scale/Item Reliability: Not available for adults
- Validity: Not available
- Citations: Bush, P. J., & Iannotti, R. J. (1988). Origins and stability of children's health beliefs relative to medicine use. *Social Science and Medicine*, 27, 345-352.
- Maiman, L. A., Becker, M. H., & Katlic, A. W. (1985). How mothers treat their children's physical symptoms. *Journal of Community Health*, 10, 136-155.
- Lewis, C. C., Pantell, R. H., & Kieckhefer, G. M. (1989). Assessment of children's health status: Field test of new approaches. *Medical Care*, 27, s54-s65.

Coping Scale for Children and Youth

- Measure: Children's coping strategies
- Scales: Assistance seeking; cognitive-behavioral problem-solving; cognitive avoidance; behavioral avoidance
- Scale/Item Reliability: Cronbach's alpha = .70 and higher for scales
- Short-term Stability: Test- retest reliability for assistance = .80; problem-solving = .80; cognitive avoidance = .81; behavioral avoidance = .73
- Concurrent Validity: Positively related to Kidcope (another measure of children's coping strategies) and to perceived self-efficacy
- Citations: Brodzinsky, D. M., Elias, M. J., Steiger, C., Simon, J., Gill, M., & Hitt, J. C. (1992). Coping scale for children and youth: Scale development and validation. *Journal of Applied Developmental Psychology*, 13, 195-214.

Early Adolescent Temperament Questionnaire

- Measure: Temperament
- Factors: Negative Emotion and Somatic Arousal, Positive Emotion and Sensitivity, High

Intensity Pleasure or Sensation Seeking

- Scale/Item Reliability: Cronbach's alpha for parent report of adolescent temperament = .64 for high-intensity pleasure, .60 for fear, .62 for irritability, .81 for attention, .65 for shyness, .67 for sadness, .70 for motor activation, .66 for low-intensity pleasure, .81 for activity level; Cronbach's alpha for adolescent self-report of temperament = .74 for high-intensity pleasure, .74 for fear, .69 for irritability, .78 for autonomic reactivity, .76 for attention, .67 for shyness, .74 for sadness, .76 for motor activation, .79 for low-intensity pleasure, .78 for activity level.
- Short-term Stability: Two- to three-week test-retest correlations were generally high, above .70 ($N=27$), except for irritability
- Validity: Correlations between DOTS-R (general activity level) and EATQ activity level = .25 ($p < .01$); .51 for DOTS-R (attention-task) and EATQ attention; .45 ($p < .001$) for DOTS-R (attention-distractibility) and EATQ attention; .45 ($p < .001$) for DOTS-R (attention-persistence) and EATQ attention; .63 ($p < .001$) for DOTS-R (sensation seeking) and EATQ high-intensity pleasure. Correlations between Spielberger (fear, anxiety) and EATQ fear = .58 ($p < .001$); between Caprara (irritability) and EATQ irritability = .48 ($p < .001$); between CDRS (depression) and EATQ sadness = .43 ($p < .001$); between Cheek and Buss (shyness) and EATQ shyness = .77 ($p < .001$); between Mehrabian and Friedman (fidget scale) and EATQ motor activation = .50 ($p < .001$).
- Citations: Capaldi, D. M., & Rothbart, M. K. (1992). Development and validation of an early adolescent temperament measure. *Journal of Early Adolescence*, 12, 153-173.

Index of Empathy for Children

- Measure: Emotional empathy
- Scale: Emotional empathy
- Scale/Item Reliability: Cronbach's alpha coefficients ranged from .54 for first-graders, to .68 for fourth-graders, to .79 for seventh-graders
- Short-term Stability: Two-week test-retest reliability coefficients = .74 for first-graders and .81 for fourth-graders
- Construct Validity: Correlations with general scoring of the Feshbach and Roe (1968) measure of empathy = .33 for males, .30 (*ns*) for females, and .33 for the total sample of first-graders. Higher scores on Index of Empathy for Children related to lower levels of distancing for first-graders ($r = -.31$) and fourth-graders ($r = -.38$) and lower levels of aggression in first-grade and fourth-grade boys
- Citations: Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development*, 53, 413-425.

Intrinsic vs. Extrinsic Orientation in the Classroom (Child & Teacher Reports)

- Measure: Children's attitudes toward learning and mastery in classroom
- Scales: Preference for challenge vs. easy work, curiosity vs. good grades, independent mastery vs. dependence on teacher, independent judgment vs. dependence on teacher's judgement, internal vs. external criteria for success and failure
- Scale/Item Reliability: Kuder-Richardson 20: preference for challenge ranges from .78 to .84; curiosity/interest ranges from .54 to .78; independent mastery ranges from .68 to .82; independent judgment ranges from .72 to .81; internal criteria ranges from .75 to .83
- Short-term Reliability: Five-month reliability ranged from .58 to .76 across subscales

- Long-term Stability: Nine-month and one-year test-retest reliability (with two different samples) ranged from .48 to .63 across subscales
- Validity: Correlation between Preference for Challenge subscale and behavioral task assessing preference for challenge = .72. Perceived cognitive competence is related to challenge ($r = .57$), curiosity ($r = .33$), and independent mastery ($r = .54$). Correlations with independent judgment and internal criteria are much lower in magnitude (.03 and .26, respectively)
- Citations: Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 32, 457-466.

Junior Self-Monitoring Scale

- Measure: Self-monitoring of school-aged children
- Scales: Concern about social appropriateness of one's self-presentation, attention to social comparison information regarding socially appropriate self-presentation, ability to regulate one's self-presentation and expressive behavior, strategic use of this ability, the situational specificity of one's self-presentation and expressive behavior.
- Scale/Item Reliability: Kuder-Richardson formula reliability coefficient = .62; mean inter-item correlation of .07; average item-total correlation of .20 (Graziano et al., 1987)
- Long-term Stability: Five-month test-retest reliability = .55 ($p < .0001$); fifteen-month test-retest reliability = .53 ($p < .0001$) (Musser & Browne, 1991).
- Validity: Correlation between self-monitoring and Eysenck Personality Questionnaire extroversion scale = .42 ($p < .0001$), psychoticism scale = .11, neuroticism scale = .15, lie scale = .19 (Musser & Browne, 1991).
- Citations: Graziano, W. G., Leone, C., Musser, L. M., & Lautenschlager, G. J. (1987). Self-monitoring in children: A differential approach to social development. *Developmental Psychology*, 23, 571-576.
- Musser, L. M., & Browne, B. A. (1991). Self-monitoring in middle childhood: Personality and social correlates. *Developmental Psychology*, 27, 994-999.

My Classroom Inventory

- Measure: Child's classroom environment
- Scales: Satisfaction, friction, cohesiveness, competitiveness, difficulty
- Scale/Item Reliability: Cronbach's alphas for short form: satisfaction = .68; friction = .78; cohesiveness = .81; competitiveness = .70; difficulty = .58
- Stability: Not available
- Predictive Validity: Measures were given in the beginning and the end of the year. Understanding of science scores were significantly higher in classrooms perceived as more cohesive ($\beta = .31$, $t = 2.7$, $p < .01$) and less difficult ($\beta = .24$, $t = 2.4$, $p < .05$), while interest was greater in classes perceived as less difficult ($\beta = .23$, $t = 2.2$, $p = .05$)
- Citations: Fraser, B. J., & Pisher, D. L. (1983). Development and validation of short forms of some instruments measuring students perceptions of actual and preferred classroom learning environment. *Science Education*, 67, 115-131.
- Fisher, D. L., & Fraser, B. J. (1981). Validity and use of the My Class Inventory. *Science Education*, 65, 145-156.
- Fraser, B. J. (1982). Development of short form of several classroom environment scales. *Journal of Educational Measurement*, 19, 221-227.

Perceptions of Peers and Self Inventory

- Measure: Children's relationship with peers
- Scales: Children's perception of their peers and of friendship; children's perception of self in the context of peer relationship, specifically self competence and self worth
- Scale/Item Reliability: Cronbach's alpha = .75 for the peer scale and .83 for the self scale
- Stability: Test retest reliability of peer scale for one month $r = .69$ ($p < .0001$) and five month $r = .55$ ($p < .005$); of self scale for one month $r = .69$ ($p < .0001$) and for five month $r = .60$, ($p < .002$)
- Validity: Not available
- Citations: Rudolph, K. D., Hammen, C., & Burge D. (1995). Cognitive representations of self, family, and peers in school-age children: Links with social competence and sociometric status. *Child Development*, 36, 413-424.

Revised Children's Manifest Anxiety Scale

- Measure: The level and nature of manifest anxiety in elementary school age children
- Scales: Physiological anxiety, worry and over-sensitivity, and concentration
- Scale/Item Reliability: Kuder-Richardson 20 reliability = .83 for item-selection sample and .85 for second sample
- Validity: Direct evidence of validity not available but several indirect and rational indicators of validity are available. Of twenty-eight items, twenty-five items were retained from the original CMAS and three new items were judged by teachers and clinicians to be indicative of anxiety. Also, consistent with previous studies using the original CMAS, females displayed greater anxiety than males
- Citations: Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology*, 6, 271-280.

Self-Perception Profile for Children

- Measure: Children's perceptions of their competencies and self-adequacy
- Scales: Scholastic competence, social acceptance, athletic competence, physical appearance, behavior conduct, global self-worth
- Scale/Item Reliability: Cronbach's alpha ranges from .80 to .85 for scholastic competence, .75 to .80 for social acceptance, .80 to .86 for athletic competence, .76 to .82 for physical appearance, .71 to .77 for behavioral conduct, and .78 to .84 for global self-worth
- Long-term Stability: Three-year test-retest reliability = .61 for global self-esteem
- Validity: Not available
- Citations: Harter, S. (1985). *Manual for the self-perception profile for children*. Unpublished manuscript. University of Denver.
- Granleese, J. & Joseph S. (1994). Reliability of the Harter self-perception profile for children and predictors of global self-worth. *The Journal of Genetic Psychology*, 4, 487-492.

7 Years - Child

Standardized Procedure

Draw-A-Person Test

- Measures: Nonverbal measure of ability
- Scale: Draw a person
- Scoring Criteria: Twelve parts of the body, placement of certain body parts, and clothing
- Scoring Categories: Presence, detail, proportion, bonus
- Interrater Reliability: Product-moment correlations range from .86 to .93 ($N = 44$)
- Scale/Item Reliability: Cronbach's alpha for 5 to 17 year olds ($N = 2622$) ranged from .83 to .89 for the composite scores, from .65 to .75 for man scores, from .56 to .71 for woman scores, and from .61 to .78 for self scores
- Short-term Reliability: Four-week test-retest correlations of composite scores range from .60 to .89, with a mean of .74 ($N = 112$)
- Validity: Correlates with the Matrix Analogies Test - Short Form, $r = .31$ ($N = 594$), and the Multilevel Academic Survey Test, $r = .27$ ($N = 1328$)
- Citations: Naglieri, J. A. (1988). *Draw a person: A quantitative scoring system*. Manual. New York, NY: The Psychological Corporation Harcourt Brace Jovanovich, Inc.

Vineland Adaptive Behavior Scales (Parent Report)

- Measure: Child's current level of adjustment and functioning
- Scales: Communication, Daily Living, Socialization, Motor
- Coder Reliability: Interrater intraclass correlation = .98 ($N = 644$); same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)
- Scale/Item Reliability: Split-half reliability at 20 and 48 months = .96 ($N = 484$); To be done at 10 years
- Short-term Reliability: Test-retest intraclass correlation = .98 ($N = 644$)
- Validity: Correlation of Vineland composite and ABIC average scale score = .58; and 5 scales of Kaufman ABC = .25 to .37.
- Citations: Sparrow, S. S., Balla, D. A., Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales Survey Form Manual (Interview Edition)*. Circle Pines, MN: American Guidance Service.

Wechsler Intelligence Scale for Children

- Measure: Child's verbal and performance abilities
- Scales: Verbal subtests (consists of information, similarities, arithmetic, vocabulary) and Performance subtests (consists of picture completion, coding, picture arrangement, block design)
- Interrater reliability: Coefficients range from .92 to .98
- Scale/Item Reliability: Reliability coefficients for verbal subtests: .84 for information, .81 for similarities, .78 for arithmetic, .87 for vocabulary. Coefficients for performance subtests: .77 for picture completion, .79 for coding, .76 for picture arrangement, .87 for block design. Split-half reliability coefficients for verbal, performance, and full-scale IQ scales range from .91 to .96. Split-half reliability for subtests ranges from .60 to .92
- Validity: The WISC-R and WISC-III are highly correlated. The WISC-R has been shown to have high construct, concurrent, and predictive validity.
- Citations: Wechsler, D. (1991). *Wechsler Intelligence Scale for Children (3rd ed.) Manual*. San Antonio, TX: Psychological Corporation.

Metacognitive Interview

Measures: Metacognition in problem-solving

Interrater Reliability: Interrater agreement above 90%

Scale/item Reliability: Cronbach's alpha = .92

Validity: Not available

Citations: Swanson, H. L. (1990). Influence of metacognitive knowledge and aptitude on problem solving. *Journal of Educational Psychology*, 82, 306-314.

Swanson, H. L., & Trahan, M. (1996). Learning disabled and average readers' working memory and comprehension: Does metacognition play a role? *British Journal of Educational Psychology*, 66, 333-355.

Star Counting Task

Measure: Children's attention, specifically their ability to regulate, focus, and shift attention

Scale/Item Reliability: Cronbach's alpha ranged between .83 to .88. Spearman-Brown formula reliability = .75

Short-term Stability: Three-week test-retest correlation = .77

Construct Validity: Star Counting Task scores were significantly correlated ($p < .01$) with tests of working memory capacity ($r = .28$ to $.53$), fluid intelligence ($r = .29$ to $.34$), speed ($r = .16$ to $.23$), and school achievement ($r = .29$ to $.35$)

Citations: De Jong, P. F. & Das-Smaal, E. A. (1995). Attention and intelligence: The validity of the Star Counting Test. *Journal of Educational Psychology*, 87, 80-92.

De Jong, P. F. & Das-Smaal, E. A. (1990). The Star-Counting Test: An Attention test for children. *Personality and Individual Differences*, 11, 597-604.

Story Telling

Measures: Orientation Provision in Narrative Content, Classification of Narrative Structure

Interrater Reliability: Reliability computed on 15% of three studies ($N = 42, 96, 1124$): for Orientation, $r = .92, .85,$ and $.87,$ respectively; for Structure, $r = .85, NA,$ and $.86,$ respectively

Short-term Reliability: To be done

Validity: To be done

Citations: Peterson, C. and McCabe, A. (1992). Parental styles of narrative elicitation: effect on children's narrative structure and content. *First Language*, 12, 229-321.
McCabe, A., Capron, and Peterson, C. (1991). Childhood versus adolescent memories. In A. McCabe and C. Peterson (Eds.), *Developing Narrative Structure*.
Peterson, C. and McCabe, A. (1983). *Developmental Psycholinguistics*. NY: Plenum Press.

7 Years - Parents

Inventory/Questionnaire

Child's Report of Parental Behavior

Measure: Children's perception of their parents' behavior

- Scales: Acceptance vs. rejection; psychological autonomy vs. psychological control; firm control vs. lax control
- Scale/Item Reliability: Not available
- Short-term Reliability: Five-week test-retest reliability coefficients for children's perceptions of mother's behavior = .79 for acceptance vs. rejection, .84 for psychological autonomy vs. psychological control, .93 for firm control vs. lax control; five-week test-retest reliability coefficients for children's perceptions of father's behavior = .79 for acceptance vs. rejection, .81 for psychological autonomy vs. psychological control, .77 for firm control vs. lax control
- Citations: Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology, 32*, 472-476.
- Schaefer, E. S. (1965). Children's reports of parental behavior, an inventory. *Child Development, 36*, 413-424.

Kerns Security Scale (Child Report)

- Measure: Child's belief about a caregiver's trustworthiness, responsiveness, and physical and emotional availability
- Scales: Caregiver's responsiveness and availability, child's reliance on the caregiver in stressful times, child's ease and interest in communication with the caregiver
- Scale/Item Reliability: Cronbach's alpha = .93
- Short-term Reliability: Two-week test-retest correlation = .75. Cronbach's alpha = .81 for time 1 and .87 for time 2
- Validity: Security scale correlates with self-esteem ($r = .40$), peer acceptance ($r = .30$), behavior conduct ($r = .36$), scholastic competence ($r = .38$), and physical appearance ($r = .32$); security scale did not significantly correlate with athletic competence ($r = .19$) or GPA ($r = .12$)
- Citations: Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescent perceptions of security in the child-mother relationship. *Developmental Psychology, 32*, 457-466.

Maternal Perceived Stress Questionnaire

- Measure: The degree to which one appraises situations in one's life as stressful
- Scale/Item Reliability: Cronbach's alpha = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)
- Short-term Stability: Two-day test-retest with undergraduates, $r = .85$ ($N = 82$)
- Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)
- Validity: Correlated with impact of life events ($r = .24$ to $.49$), depression ($r = .65$ to $.76$), physical symptoms ($r = .52$ to $.65$), social anxiety ($r = .37$ to $.48$)
- Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396.

Parenting Stress Index

- Measure: Stress in the parent-child relationship. Identifies dysfunctional parenting and predicts the potential for parental behavior problems and child adjustment difficulties within the family system
- Scales: Child Domain: Distractibility/hyperactivity (DI), adaptability (AD), reinforces parent (RE), demandingness (DE), mood (MO), acceptability (AC); Parent Domain: Competence (CO), isolation (IS), attachment (AT), health (HE), role restriction (RO),

- depression (DP), spouse (SP); life stress (LS)
- Scale/Item Reliability: Cronbach's alpha ranged from .70 to .83 for the subscales of the Child Domain and from .70 to .84 for the subscales of the Parent Domain. Reliability coefficients for the two domains and the Total Stress scale were .90 or greater
- Short-term Stability: One- to three-month test-retest reliability = .63 for the Child Domain, .91 for the Parent Domain, and .96 for the Total Stress score ($N = 30$ mothers, clinical sample). Three-week test-retest reliability = .82 for the Child Domain and .71 for the Parent Domain ($N = 15$ mothers). Three-month test-retest reliability = .77 for the Child Domain, .69 for the Parent Domain, and .88 for the Total Stress score ($N = 54$ parents)
- Long-term Stability: One-year test-retest reliability = .55 for the Child Domain, .70 for the Parent Domain, and .65 for the Total Stress score ($N = 37$ mothers).
- Validity: Extensive evidence for construct and predictive validity provided in manual.
- Citations: Abidin, R. R. (1995). *The Parenting Stress Index Professional Manual*. Odessa, FL: Psychological Assessment Resources.

7 Years - Dyad

Behavioral Observation

Mother and Child Joint Drawing Task

- Measure: Maternal warmth and control
- Scales: Proximity and orientation, positive affect, hostile affect, negative affect, negative control, positive control
- Interrater Reliability: Cohen's Kappas ranged from .81 to .93 for four coders independently observing 20% of sample
- Short-term Reliability: Not available
- Validity: Not available
- Citations: *Draw a house*. Unpublished task. Bethesda, MD: National Institutes of Health. Rubin, K. H., Cheah, C. S. L., & Fox, N. A. (2001). Emotion regulation, parenting and display of social reticence in preschoolers. *Early Education and Development: Special Issue on Emotion Regulation*, 12, 97-115.

7 Years - Environment

Inventory/Questionnaire

Hollingshead Four-Factor Index of Socioeconomic Status

- Measure: Socioeconomic Status
- Scales: Occupation rating, education rating, socioeconomic status rating
- Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$
- Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$
- Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.

Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.

Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

McMaster Family Assessment Device

Measure: Family competence in problem solving, communication, affective involvement, and behavior control

Scales: Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, general functioning

Scale/Item Reliability: Cronbach's alpha for problem solving = .74, communication = .75, roles = .72, affective responsiveness = .83, affective involvement = .78, behavior control = .72, general functioning = .92

Short-term Stability: One-week test-retest reliability correlation coefficients: Problem solving = .66, communication = .72, roles = .75, affective responsiveness = .76, affective involvement = .67, behavior control = .73, general functioning = .71

Concurrent Validity: Moderate correlations with other self-report measures of family functioning (FACES II, Family Unit Inventory).

Discriminant Validity: Differentiates significantly between clinician-rated healthy and unhealthy families

Citations: Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy, 9*, 171-180.

Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. L. (1985). The McMaster family assessment device: Reliability and validity. *Journal of Marital and Family Therapy, 11*, 345-356.

Revised Dyadic Adjustment Scale

Measure: Marital quality

Scales: Consensus (decision making, values, affection); Satisfaction (stability, conflict); Cohesion (activities, discussion); Total RDAS

Scale/Item Reliability: Cronbach's alpha = .90 for total score, ranging from .80 to .85 for scales; Spearman-Brown split-half reliability coefficient = .95 for total score, ranging from .80 to .89 for scales

Short-term Stability: Not available

Validity: Correlates with the Locke-Wallace Marital Adjustment Test (MAT) ($r = .68, p < .01$) and the DAS ($r = .97, p < .01$)

Criterion Validity: The RDAS correctly classified 81% of cases as distressed or nondistressed

Citations: Busby, D. M., Christensen, C., Crane, D. R., & Larson, J. H. (1995). A revision of the dyadic adjustment scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. *Journal of Marital and Family Therapy, 21*, 289-308.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-28.

Sibling Relationship Questionnaire Revised (Child & Parent Reports)

Measure: Components of sibling relationships scored by child and mother
Scales: Relative Status/Power; Warmth and Closeness; Conflict; and Rivalry
Scale/Item Reliability: Cronbach's alpha for competition = .63; all other subscales exceeded .70
Short-term Reliability: Mean ten-day test-retest reliability ($N = 94$ children) = .71, ranging from .58 to .86
Validity: Not available
Citations: Furman, W., & Burhmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development*, 56, 448-461.

11 Years - Child Inventory/Questionnaire

Child Behavior Checklist (Parent Report)

- Measure: Mother's rating of children's competencies and behavioral/emotional problems
- Scales: Three competence scales (Activities, Social, School); Total competence; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
- Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .88
- Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability, $r = .93$
- Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$
- Convergent Validity: Significant correlations with corresponding scales of Conners (1973) and Quay-Peterson (1987) instruments.
- Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Child Behavior Checklist B Teacher Report Form

- Measure: Teachers' rating of children's academic performance, adaptive functioning, and behavioral/emotional problems
- Scales: Academic Performance; Adaptive Functioning; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
- Interrater Reliability: Agreement between pairs of teachers, $r = .60$
- Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .91
- Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability of $r = .92$
- Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$
- Convergent Validity: Significant r s with corresponding scales of Conners Revised Teacher Rating Scale (Goyette, Conners, & Ulrich, 1978).
- Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Child Rating Questionnaire (Parent & Teacher Reports)

- Measure: Mother's and teacher's rating of child's helpfulness, sharing behavior, cooperativeness, empathy, and emotional expressiveness
- Scales: Helpfulness, Sharing Behavior, Cooperativeness, Empathy, Emotional Expressiveness
- Scale/Item Reliability: Cronbach's alpha for parents = .80 for helpfulness, .34 for sharing behavior, .79 for cooperative behavior, .65 for emotional expressiveness; Cronbach's alpha for teachers = .84 for helpfulness, .85 for sharing behavior, .85 for cooperative behavior, .74 for empathy, .78 for emotional expressiveness

Short-term Stability: Not available

Validity: Not available

Citations: Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development, 67*, 449-470.
Weir, K., Stevenson, J., & Graham, P. (1980). Behavioral deviance and teacher ratings of prosocial behavior. *Journal of the American Academy of Child Psychiatry, 19*, 68-77.
Buck, R. (1977). Nonverbal communication accuracy in preschool children: Relationships with personality and skin conductance. *Journal of Personality and Social Psychology, 35*, 225-236.
Strayer, J. (1985, August). *Children's affect and empathy in response to TV dramas*. Paper presented at the meeting of the American Psychological Association, Los Angeles, CA.

Children's Competence Beliefs and Subjective Task Values (Child, Parent & Teacher Reports)

Measure: Child's, parent's, and teacher's beliefs about child's competencies in math, reading, instrumental music, and sport and child's subjective task values

Scales: Math, music, reading, sports competencies

Scale/Item Reliability: Internal consistency reliability ranges from .90 to .96 for mother version, .74 to .90 across domains for child version, and .82 to .92 for teacher version. Reliability for competence belief scales range from .67 to .78 for first-graders, from .76 to .82 for second-graders, from .72 to .82 for fourth-graders. Reliability for subjective task value scales range from .53 to .76 for first-graders, from .62 to .83 for second-graders, from .70 to .86 for fourth-graders

Discriminant Validity: Consistent, interpretable factors reflect discriminations across activity domains and between constructs within domains

Predictive Validity: Consistent grade differences (for all activities except sports, younger children's perceptions of competence and subjective task values were more positive than the beliefs of older children) and gender differences (boys had more positive competence beliefs and values than did girls for sport activities, and more positive competence beliefs for mathematics; girls had more positive competence beliefs and values than did boys for reading and music activities) with theoretical predictions and previous empirical findings drawn from studies with older children

Citations: Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A Theoretical analysis. *Developmental Review, 12*, 265-310.
Eccles, J., Wigfield, A., Harold, R., & Blumenfeld, P. (1993) Age and gender difference in children's self- and task perceptions during elementary school. *Child Development, 64*, 830- 847.

Children's Depression Inventory

Measure: How often child has experienced symptoms of depression in past 2 weeks

Scales: Negative mood, interpersonal problems, ineffectiveness, anhedonia, negative self-esteem

Scale/Item Reliability: Cronbach's alpha = .86 for Total CDI score; range from .59 to .68 for factor scales

Short-term Stability: Test-retest reliability acceptable over 2-week period, according to author

Validity: Not available

Citations: Kovac, M., & Beck, A.T. (1977). An empirical-clinical approach toward a definition of childhood depression. In J. Schulterbrandt & A. Raskin (Eds.), *Depression in childhood: Diagnosis, treatment, and conceptual models*. New York: Raven Press.

Children's Occupation, Activity and Trait Measures

Measure: Children's sex-typed beliefs about others and self
Scales: Attitude Measure and Personal Measure for Occupation, Activity, and Trait
Factors: Gender, attitudes, masculine self, feminine self, feminine & masculine occupations, activities, and traits for self and others
Scale/Item Reliability: Cronbach's alpha ranges from .67 to .87 for all subscales; Guttman split-half reliability ranges from .63 to .85
Long-term Stability: One-year test-retest correlations range from .71 to .82
Validity: Not available
Citations: Bigler, R. S., Liben, L. S., Lobliner, D. B., & Yekel, C. A. (1995). *The structure of gender schemata: Conceptual and empirical relations among gender constructs in children and adults*. Unpublished manuscript.

Child's Risk-Taking, Health Beliefs, Health Status, Worry about Health Questionnaire (Parent Report)

Measure: Mother's perception of the child's feelings towards certain risky activities and behaviors, mother's perception of and concerns about the health status of the child and other family members.
Scales: Risk Illness, Risk Injury, Health Beliefs and Ideas
Scale/Item Reliability: Not available for adults
Validity: Not available
Citations: Bush, P. J., & Iannotti, R. J. (1988). Origins and stability of children's health beliefs relative to medicine use. *Social Science and Medicine*, 27, 345-352.
Maiman, L. A., Becker, M. H., & Katlic, A. W. (1985). How mothers treat their children's physical symptoms. *Journal of Community Health*, 10, 136-155.
Lewis, C. C., Pantell, R. H., & Kieckhefer, G. M. (1989). Assessment of children's health status: Field test of new approaches. *Medical Care*, 27, s54-s65.

Coping Scale for Children and Youth

Measure: Children's coping strategies
Scales: Assistance seeking; cognitive-behavioral problem-solving; cognitive avoidance; behavioral avoidance
Scale/Item Reliability: Cronbach's alpha = .70 and higher for scales
Short-term Stability: Test- retest reliability for assistance = .80; problem-solving = .80; cognitive avoidance = .81; behavioral avoidance = .73
Concurrent Validity: Positively related to Kidcope (another measure of children's coping strategies) and to perceived self-efficacy
Citations: Brodzinsky, D. M., Elias, M. J., Steiger, C., Simon, J., Gill, M., & Hitt, J. C. (1992). Coping scale for children and youth: Scale development and validation. *Journal of Applied Developmental Psychology*, 13, 195-214

Early Adolescent Temperament Questionnaire

Measure: Temperament

Factors: Negative Emotion and Somatic Arousal, Positive Emotion and Sensitivity, High Intensity Pleasure or Sensation Seeking

Scale/Item Reliability: Cronbach's alpha for parent report of adolescent temperament = .64 for high-intensity pleasure, .60 for fear, .62 for irritability, .81 for attention, .65 for shyness, .67 for sadness, .70 for motor activation, .66 for low-intensity pleasure, .81 for activity level; Cronbach's alpha for adolescent self-report of temperament = .74 for high-intensity pleasure, .74 for fear, .69 for irritability, .78 for autonomic reactivity, .76 for attention, .67 for shyness, .74 for sadness, .76 for motor activation, .79 for low-intensity pleasure, .78 for activity level.

Short-term Stability: Two- to three-week test-retest correlations were generally high, above .70 ($N=27$), except for irritability

Validity: Correlations between DOTS-R (general activity level) and EATQ activity level = .25 ($p < .01$); .51 for DOTS-R (attention-task) and EATQ attention; .45 ($p < .001$) for DOTS-R (attention-distractibility) and EATQ attention; .45 ($p < .001$) for DOTS-R (attention-persistence) and EATQ attention; .63 ($p < .001$) for DOTS-R (sensation seeking) and EATQ high-intensity pleasure. Correlations between Spielberger (fear, anxiety) and EATQ fear = .58 ($p < .001$); between Caprara (irritability) and EATQ irritability = .48 ($p < .001$); between CDRS (depression) and EATQ sadness = .43 ($p < .001$); between Cheek and Buss (shyness) and EATQ shyness = .77 ($p < .001$); between Mehrabian and Friedman (fidget scale) and EATQ motor activation = .50 ($p < .001$).

Citations: Capaldi, D. M., & Rothbart, M. K. (1992). Development and validation of an early adolescent temperament measure. *Journal of Early Adolescence*, 12, 153-173.

Index of Empathy for Children

Measure: Emotional empathy

Scale: Emotional empathy

Scale/Item Reliability: Cronbach's alpha coefficients ranged from .54 for first-graders, to .68 for fourth-graders, to .79 for seventh-graders

Short-term Stability: Two-week test-retest reliability coefficients = .74 for first-graders and .81 for fourth-graders

Construct Validity: Correlations with general scoring of the Feshbach and Roe (1968) measure of empathy = .33 for males, .30 (*ns*) for females, and .33 for the total sample of first-graders. Higher scores on Index of Empathy for Children related to lower levels of distancing for first-graders ($r = -.31$) and fourth-graders ($r = -.38$) and lower levels of aggression in first-grade and fourth-grade boys

Citations: Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development*, 53, 413-425.

Intrinsic vs. Extrinsic Orientation in the Classroom (Child & Teacher Reports)

Measure: Children's attitudes toward learning and mastery in classroom

Scales: Preference for challenge vs. easy work, curiosity vs. good grades, independent mastery vs. dependence on teacher, independent judgment vs. dependence on teacher's judgement, internal vs. external criteria for success and failure

Scale/Item Reliability: Kuder-Richardson 20: preference for challenge ranges from .78 to .84; curiosity/interest ranges from .54 to .78; independent mastery ranges from .68 to .82;

independent judgment ranges from .72 to .81; internal criteria ranges from .75 to .83

Short-term Reliability: Five-month reliability ranged from .58 to .76 across subscales

Long-term Stability: Nine-month and one-year test-retest reliability (with two different samples) ranged from .48 to .63 across subscales

Validity: Correlation between Preference for Challenge subscale and behavioral task assessing preference for challenge = .72. Perceived cognitive competence is related to challenge ($r = .57$), curiosity ($r = .33$), and independent mastery ($r = .54$). Correlations with independent judgment and internal criteria are much lower in magnitude (.03 and .26, respectively)

Citations: Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 32, 457-466.

Junior Self-Monitoring Scale

Measure: Self-monitoring of school-aged children

Scales: Concern about social appropriateness of one's self-presentation, attention to social comparison information regarding socially appropriate self-presentation, ability to regulate one's self-presentation and expressive behavior, strategic use of this ability, the situational specificity of one's self-presentation and expressive behavior.

Scale/Item Reliability: Kuder-Richardson formula reliability coefficient = .62; mean inter-item correlation of .07; average item-total correlation of .20 (Graziano et al., 1987)

Long-term Stability: Five-month test-retest reliability = .55 ($p < .0001$); fifteen-month test-retest reliability = .53 ($p < .0001$) (Musser & Browne, 1991).

Validity: Correlation between self-monitoring and Eysenck Personality Questionnaire extroversion scale = .42 ($p < .0001$), psychoticism scale = .11, neuroticism scale = .15, lie scale = .19 (Musser & Browne, 1991).

Citations: Graziano, W. G., Leone, C., Musser, L. M., & Lautenschlager, G. J. (1987). Self-monitoring in children: A differential approach to social development. *Developmental Psychology*, 23, 571-576.

Musser, L. M., & Browne, B. A. (1991). Self-monitoring in middle childhood: Personality and social correlates. *Developmental Psychology*, 27, 994-999.

My Classroom Inventory

Measure: Child's classroom environment

Scales: Satisfaction, friction, cohesiveness, competitiveness, difficulty

Scale/Item Reliability: Cronbach's alphas for short form: satisfaction = .68; friction = .78; cohesiveness = .81; competitiveness = .70; difficulty = .58

Stability: Not available

Predictive Validity: Measures were given in the beginning and the end of the year. Understanding of science scores were significantly higher in classrooms perceived as more cohesive ($\beta = .31$, $t = 2.7$, $p < .01$) and less difficult ($\beta = .24$, $t = 2.4$, $p < .05$), while interest was greater in classes perceived as less difficult ($\beta = .23$, $t = 2.2$, $p = .05$)

Citations: Fraser, B. J., & Pisher, D. L. (1983). Development and validation of short forms of some instruments measuring students perceptions of actual and preferred classroom learning environment. *Science Education*, 67, 115-131.

Fisher, D. L., & Fraser, B. J. (1981). Validity and use of the My Class Inventory. *Science Education*, 65, 145-156.

Fraser, B. J. (1982). Development of short form of several classroom environment scales. *Journal of Educational Measurement, 19*, 221-227.

Perceptions of Peers and Self Inventory

Measure: Children's relationship with peers

Scales: Children's perception of their peers and of friendship; children's perception of self in the context of peer relationship, specifically self competence and self worth

Scale/Item Reliability: Cronbach's alpha = .75 for the peer scale and .83 for the self scale

Stability: Test retest reliability of peer scale for one month $r = .69$ ($p < .0001$) and five month $r = .55$ ($p < .005$); of self scale for one month $r = .69$ ($p < .0001$) and for five month $r = .60$, ($p < .002$)

Validity: Not available

Citations: Rudolph, K. D., Hammen, C., & Burge D. (1995). Cognitive representations of self, family, and peers in school-age children: Links with social competence and sociometric status. *Child Development, 36*, 413-424.

Revised Children's Manifest Anxiety Scale

Measure: The level and nature of manifest anxiety in elementary school age children

Scales: Physiological anxiety, worry and over-sensitivity, and concentration

Scale/Item Reliability: Kuder-Richardson 20 reliability = .83 for item-selection sample and .85 for second sample

Validity: Direct evidence of validity not available but several indirect and rational indicators of validity are available. Of twenty-eight items, twenty-five items were retained from the original CMAS and three new items were judged by teachers and clinicians to be indicative of anxiety. Also, consistent with previous studies using the original CMAS, females displayed greater anxiety than males

Citations: Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology, 6*, 271-280.

Self-Perception Profile for Children

Measure: Children's perceptions of their competencies and self-adequacy

Scales: Scholastic competence, social acceptance, athletic competence, physical appearance, behavior conduct, global self-worth

Scale/Item Reliability: Cronbach's alpha ranges from .80 to .85 for scholastic competence, .75 to .80 for social acceptance, .80 to .86 for athletic competence, .76 to .82 for physical appearance, .71 to .77 for behavioral conduct, and .78 to .84 for global self-worth

Long-term Stability: Three-year test-retest reliability = .61 for global self-esteem

Validity: Not available

Citations: Harter, S. (1985). *Manual for the self-perception profile for children*. Unpublished manuscript. University of Denver.

Granleese, J. & Joseph S. (1994). Reliability of the Harter self-perception profile for children and predictors of global self-worth. *The Journal of Genetic Psychology, 4*, 487-492.

11 Years - Child

Standardized Procedure

Draw-A-Person Test

- Measures: Nonverbal measure of ability
- Scale: Draw a person
- Scoring Criteria: Twelve parts of the body, placement of certain body parts, and clothing
- Scoring Categories: Presence, detail, proportion, bonus
- Interrater Reliability: Product-moment correlations range from .86 to .93 ($N = 44$)
- Scale/Item Reliability: Cronbach's alpha for 5 to 17 year olds ($N = 2622$) ranged from .83 to .89 for the composite scores, from .65 to .75 for man scores, from .56 to .71 for woman scores, and from .61 to .78 for self scores
- Short-term Reliability: Four-week test-retest correlations of composite scores range from .60 to .89, with a mean of .74 ($N = 112$)
- Validity: Correlates with the Matrix Analogies Test - Short Form, $r = .31$ ($N = 594$), and the Multilevel Academic Survey Test, $r = .27$ ($N = 1328$)
- Citations: Naglieri, J. A. (1988). *Draw a person: A quantitative scoring system*. Manual. New York, NY: The Psychological Corporation Harcourt Brace Jovanovich, Inc.

Vineland Adaptive Behavior Scales (Parent Report)

- Measure: Child's current level of adjustment and functioning
- Scales: Communication, Daily Living, Socialization, Motor
- Coder Reliability: Interrater intraclass correlation = .98 ($N = 644$); same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)
- Scale/Item Reliability: Split-half reliability at 20 and 48 months = .96 ($N = 484$); To be done at 10 years
- Short-term Reliability: Test-retest intraclass correlation = .98 ($N = 644$)
- Validity: Correlation of Vineland composite and ABIC average scale score = .58; and 5 scales of Kaufman ABC = .25 to .37.
- Citations: Sparrow, S. S., Balla, D. A., Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales Survey Form Manual (Interview Edition)*. Circle Pines, MN: American Guidance Service.

Wechsler Intelligence Scale for Children

- Measure: Child's verbal and performance abilities
- Scales: Verbal subtests (consists of information, similarities, arithmetic, vocabulary) and Performance subtests (consists of picture completion, coding, picture arrangement, block design)
- Interrater reliability: Coefficients range from .92 to .98
- Scale/Item Reliability: Reliability coefficients for verbal subtests: .84 for information, .81 for similarities, .78 for arithmetic, .87 for vocabulary. Coefficients for performance subtests: .77 for picture completion, .79 for coding, .76 for picture arrangement, .87 for block design. Split-half reliability coefficients for verbal, performance, and full-scale IQ scales range from .91 to .96. Split-half reliability for subtests ranges from .60 to .92
- Validity: The WISC-R and WISC-III are highly correlated. The WISC-R has been shown to have high construct, concurrent, and predictive validity.
- Citations: Wechsler, D. (1991). *Wechsler Intelligence Scale for Children (3rd ed.) Manual*. San

Antonio, TX: Psychological Corporation.

Metacognitive Interview

Measures: Metacognition in problem-solving

Interrater Reliability: Interrater agreement above 90%

Scale/item Reliability: Cronbach's alpha = .92

Validity: Not available

Citations: Swanson, H. L. (1990). Influence of metacognitive knowledge and aptitude on problem solving. *Journal of Educational Psychology*, 82, 306-314.

Swanson, H. L., & Trahan, M. (1996). Learning disabled and average readers' working memory and comprehension: Does metacognition play a role? *British Journal of Educational Psychology*, 66, 333-355.

Star Counting Task

Measure: Children's attention, specifically their ability to regulate, focus, and shift attention

Scale/Item Reliability: Cronbach's alpha ranged between .83 to .88. Spearman-Brown formula reliability = .75

Short-term Stability: Three-week test-retest correlation = .77

Construct Validity: Star Counting Task scores were significantly correlated ($p < .01$) with tests of working memory capacity ($r = .28$ to $.53$), fluid intelligence ($r = .29$ to $.34$), speed ($r = .16$ to $.23$), and school achievement ($r = .29$ to $.35$)

Citations: De Jong, P. F. & Das-Smaal, E. A. (1995). Attention and intelligence: The validity of the Star Counting Test. *Journal of Educational Psychology*, 87, 80-92.

De Jong, P. F. & Das-Smaal, E. A. (1990). The Star-Counting Test: An Attention test for children. *Personality and Individual Differences*, 11, 597-604.

Story Telling

Measures: Orientation Provision in Narrative Content, Classification of Narrative Structure

Interrater Reliability: Reliability computed on 15% of three studies ($N = 42, 96, 1124$): for Orientation, $r = .92, .85,$ and $.87,$ respectively; for Structure, $r = .85, NA,$ and $.86,$ respectively

Short-term Reliability: To be done

Validity: To be done

Citations: Peterson, C. and McCabe, A. (1992). Parental styles of narrative elicitation: effect on children's narrative structure and content. *First Language*, 12, 229-321.
McCabe, A., Capron, and Peterson, C. (1991). Childhood versus adolescent memories. In A. McCabe and C. Peterson (Eds.), *Developing Narrative Structure*.
Peterson, C. and McCabe, A. (1983). *Developmental Psycholinguistics*. NY: Plenum Press.

11 Years - Parents

Inventory/Questionnaire

Child's Report of Parental Behavior

- Measure: Children's perception of their parents' behavior
- Scales: Acceptance vs. rejection; psychological autonomy vs. psychological control; firm control vs. lax control
- Scale/Item Reliability: Not available
- Short-term Reliability: Five-week test-retest reliability coefficients for children's perceptions of mother's behavior = .79 for acceptance vs. rejection, .84 for psychological autonomy vs. psychological control, .93 for firm control vs. lax control; five-week test-retest reliability coefficients for children's perceptions of father's behavior = .79 for acceptance vs. rejection, .81 for psychological autonomy vs. psychological control, .77 for firm control vs. lax control
- Citations: Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology, 32*, 472-476.
- Schaefer, E. S. (1965). Children's reports of parental behavior, an inventory. *Child Development, 36*, 413-424.

Kerns Security Scale (Child Report)

- Measure: Child's belief about a caregiver's trustworthiness, responsiveness, and physical and emotional availability
- Scales: Caregiver's responsiveness and availability, child's reliance on the caregiver in stressful times, child's ease and interest in communication with the caregiver
- Scale/Item Reliability: Cronbach's alpha = .93
- Short-term Reliability: Two-week test-retest correlation = .75. Cronbach's alpha = .81 for time 1 and .87 for time 2
- Validity: Security scale correlates with self-esteem ($r = .40$), peer acceptance ($r = .30$), behavior conduct ($r = .36$), scholastic competence ($r = .38$), and physical appearance ($r = .32$); security scale did not significantly correlate with athletic competence ($r = .19$) or GPA ($r = .12$)
- Citations: Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescent= perceptions of security in the child-mother relationship. *Developmental Psychology, 32*, 457-466.

Maternal Perceived Stress Questionnaire

- Measure: The degree to which one appraises situations in one's life as stressful
- Scale/Item Reliability: Cronbach's alpha = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)
- Short-term Stability: Two-day test-retest with undergraduates, $r = .85$ ($N = 82$)
- Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)
- Validity: Correlated with impact of life events ($r = .24$ to $.49$), depression ($r = .65$ to $.76$), physical symptoms ($r = .52$ to $.65$), social anxiety ($r = .37$ to $.48$)
- Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396.

Parenting Stress Index

Measure: Stress in the parent-child relationship. Identifies dysfunctional parenting and predicts the potential for parental behavior problems and child adjustment difficulties within the family system

Scales: Child Domain: Distractibility/hyperactivity (DI), adaptability (AD), reinforces parent (RE), demandingness (DE), mood (MO), acceptability (AC); Parent Domain: Competence (CO), isolation (IS), attachment (AT), health (HE), role restriction (RO), depression (DP), spouse (SP); life stress (LS)

Scale/Item Reliability: Cronbach's alpha ranged from .70 to .83 for the subscales of the Child Domain and from .70 to .84 for the subscales of the Parent Domain. Reliability coefficients for the two domains and the Total Stress scale were .90 or greater

Short-term Stability: One- to three-month test-retest reliability = .63 for the Child Domain, .91 for the Parent Domain, and .96 for the Total Stress score ($N = 30$ mothers, clinical sample). Three-week test-retest reliability = .82 for the Child Domain and .71 for the Parent Domain ($N = 15$ mothers). Three-month test-retest reliability = .77 for the Child Domain, .69 for the Parent Domain, and .88 for the Total Stress score ($N = 54$ parents)

Long-term Stability: One-year test-retest reliability = .55 for the Child Domain, .70 for the Parent Domain, and .65 for the Total Stress score ($N = 37$ mothers).

Validity: Extensive evidence for construct and predictive validity provided in manual.

Citations: Abidin, R. R. (1995). *The Parenting Stress Index Professional Manual*. Odessa, FL: Psychological Assessment Resources.

11 Years - Dyad

Behavioral Observation

Mother and Child Joint Drawing Task

Measure: Maternal warmth and control

Scales: Proximity and orientation, positive affect, hostile affect, negative affect, negative control, positive control

Interrater Reliability: Cohen's Kappas ranged from .81 to .93 for four coders independently observing 20% of sample

Short-term Reliability: Not available

Validity: Not available

Citations: *Draw a house*. Unpublished task. Bethesda, MD: National Institutes of Health. Rubin, K. H., Cheah, C. S. L., & Fox, N. A. (2001). Emotion regulation, parenting and display of social reticence in preschoolers. *Early Education and Development: Special Issue on Emotion Regulation, 12*, 97-115.

11 Years - Environment

Inventory/Questionnaire

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status

Scales: Occupation rating, education rating, socioeconomic status rating

Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$

Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$

Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.

Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.

Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

McMaster Family Assessment Device

Measure: Family competence in problem solving, communication, affective involvement, and behavior control

Scales: Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, general functioning

Scale/Item Reliability: Cronbach's alpha for problem solving = .74, communication = .75, roles = .72, affective responsiveness = .83, affective involvement = .78, behavior control = .72, general functioning = .92

Short-term Stability: One-week test-retest reliability correlation coefficients: Problem solving = .66, communication = .72, roles = .75, affective responsiveness = .76, affective involvement = .67, behavior control = .73, general functioning = .71

Concurrent Validity: Moderate correlations with other self-report measures of family functioning (FACES II, Family Unit Inventory).

Discriminant Validity: Differentiates significantly between clinician-rated healthy and unhealthy families

Citations: Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy*, 9, 171-180.

Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. L. (1985). The McMaster family assessment device: Reliability and validity. *Journal of Marital and Family Therapy*, 11, 345-356.

Revised Dyadic Adjustment Scale

Measure: Marital quality

Scales: Consensus (decision making, values, affection); Satisfaction (stability, conflict); Cohesion (activities, discussion); Total RDAS

Scale/Item Reliability: Cronbach's alpha = .90 for total score, ranging from .80 to .85 for scales; Spearman-Brown split-half reliability coefficient = .95 for total score, ranging from .80 to .89 for scales

Short-term Stability: Not available

Validity: Correlates with the Locke-Wallace Marital Adjustment Test (MAT) ($r = .68, p < .01$) and the DAS ($r = .97, p < .01$)

Criterion Validity: The RDAS correctly classified 81% of cases as distressed or nondistressed

Citations: Busby, D. M., Christensen, C., Crane, D. R., & Larson, J. H. (1995). A revision of the dyadic adjustment scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. *Journal of Marital and Family Therapy*

Therapy, 21, 289-308.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, 38, 15-28.

Sibling Relationship Questionnaire Revised (Child & Parent Reports)

Measure: Components of sibling relationships scored by child and mother
Scales: Relative Status/Power; Warmth and Closeness; Conflict; and Rivalry
Scale/Item Reliability: Cronbach's alpha for competition = .63; all other subscales exceeded .70
Short-term Reliability: Mean ten-day test-retest reliability ($N = 94$ children) = .71, ranging from .58 to .86
Validity: Not available
Citations: Furman, W., & Burhmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development*, 56, 448-461.

14 Years - Child Inventory/Questionnaire

Adolescent Interpersonal Competence Questionnaire

- Measure: Competence in close relationships
Scales: Self-disclosure, providing emotional support to friends, management of conflicts, negative assertion, initiation of friendship
Scale/Item Reliability: Cronbach's alpha = .92 ($N = 70$)
Short-term Stability: Not available
Validity: Developed from the Interpersonal Competence Questionnaire, which shows predictive and discriminant validity
Citations: Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development, 61*, 1101-1111.

Child Behavior Checklist (Parent Report)

- Measure: Mother's rating of children's competencies and behavioral/emotional problems
Scales: Three competence scales (Activities, Social, School); Total competence; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .88
Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability, $r = .93$
Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$
Convergent Validity: Significant correlations with corresponding scales of Conners (1973) and Quay-Peterson (1987) instruments.
Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Child Rating Questionnaire (Parent Report)

- Measure: Mother's rating of child's helpfulness, sharing behavior, cooperativeness, empathy, and emotional expressiveness
Scales: Helpfulness, Sharing Behavior, Cooperativeness, Empathy, Emotional Expressiveness
Scale/Item Reliability: Cronbach's alpha for teachers = .84 for helpfulness, .85 for sharing behavior, .85 for cooperative behavior, .74 for empathy, .78 for emotional expressiveness; Cronbach's alpha for parents = .80 for helpfulness, .34 for sharing behavior, .79 for cooperative behavior, .65 for emotional expressiveness
Short-term Stability: Not available
Validity: Not available
Citations: Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development, 67*, 449-470.
Weir, K., Stevenson, J., & Graham, P. (1980). Behavioral deviance and teacher ratings of prosocial behavior. *Journal of the American Academy of Child Psychiatry, 19*, 68-77.
Buck, R. (1977). Nonverbal communication accuracy in preschool children:

Relationships with personality and skin conductance. *Journal of Personality and Social Psychology*, 35, 225-236.

Strayer, J. (1985, August). *Children's affect and empathy in response to TV dramas*. Paper presented at the meeting of the American Psychological Association, Los Angeles, CA.

Child's Health Beliefs Questionnaire (Child & Parent Reports)

Measure: Mother's and child's perception of and concerns about the health status of the child
Scales: Health Beliefs and Ideas
Scale/Item Reliability: Not available for adults
Validity: Not available
Citations: Bush, P. J., & Iannotti, R. J. (1988). Origins and stability of children's health beliefs relative to medicine use. *Social Science and Medicine*, 27, 345-352.
Maiman, L. A., Becker, M. H., & Katlic, A. W. (1985). How mothers treat their children's physical symptoms. *Journal of Community Health*, 10, 136-155.
Lewis, C. C., Pantell, R. H., & Kieckhefer, G. M. (1989). Assessment of children's health status: Field test of new approaches. *Medical Care*, 27, s54-s65.

Children's Competence Beliefs and Subjective Task Values (Child & Parent Reports)

Measure: Child's and parents' beliefs about child's competencies in math, reading, instrumental music, and sport; Child's subjective task values
Scales: Math, music, reading, sports competencies
Scale/Item Reliability: Internal consistency reliability ranges from .74 to .90 across domains for child version, from .82 to .92 for teacher version, from .90 to .96 for mother version. Reliability for competence belief scales range from .67 to .78 for first-graders, from .76 to .82 for second-graders, from .72 to .82 for fourth-graders. Reliability for subjective task value scales range from .53 to .76 for first-graders, from .62 to .83 for second-graders, from .70 to .86 for fourth-graders
Discriminant Validity: Consistent, interpretable factors reflect discriminations across activity domains and between constructs within domains
Predictive Validity: Consistent grade differences (for all activities except sports, younger children's perceptions of competence and subjective task values were more positive than the beliefs of older children) and gender differences (boys had more positive competence beliefs and values than did girls for sport activities, and more positive competence beliefs for mathematics; girls had more positive competence beliefs and values than did boys for reading and music activities) with theoretical predictions and previous empirical findings drawn from studies with older children
Citations: Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A Theoretical analysis. *Developmental Review*, 12, 265-310.
Eccles, J., Wigfield, A., Harold, R., & Blumenfeld, P. (1993) Age and gender difference in children's self- and task perceptions during elementary school. *Child Development*, 64, 830- 847.

Coping Scale for Children and Youth

Measure: Children's coping strategies
Scales: Assistance seeking; cognitive-behavioral problem-solving; cognitive avoidance; behavioral avoidance

Scale/Item Reliability: Cronbach's alphas = .70 and higher for scales
Short-term Stability: Test- retest reliability for assistance = .80; problem-solving = .80; cognitive avoidance = .81; behavioral avoidance = .73
Concurrent Validity: Positively related to Kidcope (another measure of children's coping strategies) and to perceived self-efficacy
Citations: Brodzinsky, D. M., Elias, M. J., Steiger, C., Simon, J., Gill, M., & Hitt, J. C. (1992). Coping scale for children and youth: Scale development and validation. *Journal of Applied Developmental Psychology, 13*, 195-214.

Early Adolescent Temperament Questionnaire - Revised SF (Child Report)

Measure: Adolescent's temperament (self-report)
Factors: Activation control, affiliation, aggression, attention, depressive mood, fear, frustration, inhibitory control, pleasure sensitivity, perceptual sensitivity, shyness, surgency
Scale/Item Reliability: Cronbach's alphas range from .65 to .82
Short-term Stability: Two- to three-week test-retest correlations were generally high, above .70 ($N=27$), except for irritability
Validity: Correlations with long form were all $> .89$
Citations: Ellis, L.K., & Rothbart, M.K. (1999). *Manual for the Early Adolescent Temperament Questionnaire - Revised, Short Form*. Unpublished manuscript, University of Oregon, Department of Psychology.

Early Adolescent Temperament Questionnaire - Revised (Parent Report)

Measure: Mother's report of adolescent temperament
Factors: Activation control, affiliation, aggression, attention, depressive mood, fear, frustration, inhibitory control, shyness, surgency
Scale/Item Reliability: Cronbach's alphas range from .65 to .86
Short-term Stability: Not available
Validity: Correlations with child's EATQ self-report were significant for all scales ($p < .05$), except for inhibitory control and shyness
Citations: Ellis, L.K., & Rothbart, M.K. (1999). *Manual for the Early Adolescent Temperament Questionnaire - Revised, Short Form*. Unpublished manuscript, University of Oregon, Department of Psychology.

Emotional Autonomy Scale

Measure: Cognitive and affective components of adolescents' emotional autonomy
Scales: Perceives parents as people, parental deidealization, nondependency on parents, individuation
Scale/Item Reliability: Cronbach's alpha = .75 for total score and .51 to .63 for scale scores ($N = 865$)
Short-term Reliability: Not available
Validity: Based on Blos's theory of individuation
Citations: Steinberg, L., & Silverberg, S. B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development, 57*, 841-851.

Index of Empathy for Children and Adolescents

Measure: Emotional empathy
Scale: Emotional empathy

- Scale/Item Reliability: Cronbach's alpha coefficients ranged from .54 for first-graders, to .68 for fourth-graders, to .79 for seventh-graders
- Short-term Stability: Two-week test-retest reliability coefficients = .74 for first-graders and .81 for fourth-graders
- Construct Validity: Correlations with general scoring of the Feshbach and Roe (1968) measure of empathy = .33 for males, .30 (*ns*) for females, and .33 for the total sample of first-graders. Higher scores on Index of Empathy for Children related to lower levels of distancing for first-graders ($r = -.31$) and fourth-graders ($r = -.38$) and lower levels of aggression in first-grade and fourth-grade boys
- Citations: Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development, 53*, 413-425.

Junior Self-Monitoring Scale

- Measure: Self-monitoring of school-aged children
- Scales: Concern about social appropriateness of one's self-presentation, attention to social comparison information regarding socially appropriate self-presentation, ability to regulate one's self-presentation and expressive behavior, strategic use of this ability, the situational specificity of one's self-presentation and expressive behavior.
- Scale/Item Reliability: Kuder-Richardson formula reliability coefficient = .62; mean inter-item correlation of .07; average item-total correlation of .20 (Graziano et al., 1987)
- Long-term Stability: Five-month test-retest reliability = .55 ($p < .0001$); fifteen-month test-retest reliability = .53 ($p < .0001$) (Musser & Browne, 1991).
- Validity: Correlation between self-monitoring and Eysenck Personality Questionnaire extroversion scale = .42 ($p < .0001$), psychoticism scale = .11, neuroticism scale = .15, lie scale = .19 (Musser & Browne, 1991).
- Citations: Graziano, W. G., Leone, C., Musser, L. M., & Lautenschlager, G. J. (1987). Self-monitoring in children: A differential approach to social development. *Developmental Psychology, 23*, 571-576.
- Musser, L. M., & Browne, B. A. (1991). Self-monitoring in middle childhood: Personality and social correlates. *Developmental Psychology, 27*, 994-999.

Pubertal Development Scale

- Measure: Self-report of physical growth
- Scale/Item Reliability: Cronbach's alphas ranged from .68 to .83 with a median of .77 ($N = 253$)
- Short-term Stability: Only 6.4% of girls' ratings and 9.8% of boys' ratings decreased over time ($N = 253$)
- Validity: Correlates with physician ratings, $r = .61$ to .67 ($N = 151$)
- Citations: Petersen, A. C., Crockett, L., Richards, M., & Boxer, M. (1988). A self-report measure of pubertal status: Reliability, validity, and initial norms. *Journal of Youth and Adolescence, 17*, 117-133.
- Brooks-Gunn, J., Warren, M. P., Rosso, J., & Gargiulo, J. (1987). Validity of self-report measures of girls' pubertal status. *Child Development, 58*, 829-841.

Revised Children's Manifest Anxiety Scale

- Measure: The level and nature of manifest anxiety

Scales: Physiological anxiety, worry and over-sensitivity, and concentration
 Scale/Item Reliability: Kuder-Richardson 20 reliability = .83 for item-selection sample and .85 for second sample
 Validity: Direct evidence of validity not available but several indirect and rational indicators of validity are available. Of twenty-eight items, twenty-five items were retained from the original CMAS and three new items were judged by teachers and clinicians to be indicative of anxiety. Also, consistent with previous studies using the original CMAS, females displayed greater anxiety than males
 Citations: Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology*, 6, 271-280.

Self-Perception Profile for Adolescents

Measure: Adolescent self-perception in multiple domains
 Scales: Scholastic competence, social acceptance, athletic competence, physical appearance, job competence, romantic appeal, behavioral conduct, close friendships, self worth
 Scale/Item Reliability: Cronbach's alphas ranged from .74 to .92 in a sample of 9th graders ($N = 123$) .
 Short-term Reliability: Not available
 Validity: Not available
 Citations: Harter, S. (1988). *The self-perception profile for adolescents*. Unpublished manual, University of Denver, Denver, CO.

Separation Individuation Test of Adolescence

Measure: Adolescent separation-individuation
 Scales: Separation anxiety, engulfment anxiety, nurturance seeking, peer enmeshment, teacher enmeshment, practicing-mirroring, need denial, reflection expectancy, and healthy separation
 Scale/Item Reliability: Cronbach's alphas ranged from .64 to .85 with a median of .74 in a clinical sample ($N = 117$) and .64 to .88 with a median of .76 in a non-clinical sample ($N = 302$)
 Short-term Reliability: Not available
 Validity: Scales correlated with subscales from the Million Adolescent Personality Inventory, the Clinician Rating Scale of Borderline and Narcissistic Psychopathology, and the Clinician Rating Scale of Separation-Individuation
 Citations: Levine, J. B., & Saintonge, S. (1993). Psychometric properties of the separation-individuation test of adolescence within a clinical population. *Journal of Clinical Psychology*, 49, 492-507.

Sociomoral Reflection Measure B Short Form

Measure: Social and moral reasoning
 Scales: Total sociomoral reflection maturity score
 Scale/Item Reliability: Cronbach's alpha was .93 ($N = 384$)
 Interrater Reliability: Correlations range from .94 to .99 ($N = 22$ to 24)
 Short-term Reliability: Not available
 Validity: Correlates with the Moral Judgement Interview, $r = .69$ ($N = 44$)
 Citations: Basinger, K. S., Gibbs, J. C., & Fuller, D. (1995). Context and the measurement of

moral judgement. *International Journal of Behavioral Development*, 18, 537-556.

Youth Self-Report Inventory

- Measure: Adolescent psychopathology
- Scales: Withdrawal, somatic complaints, anxious-depressed, social problems, thought problems, attention problems, delinquent behaviors, aggressive behaviors, externalizing scale, internalizing scale, total problem behavior scale, lie scale
- Scale/Item Reliability: Most scales had Cronbach's alphas between .70 and .89; thought problems and delinquent behaviors had alphas between .62 and .69 ($N = 413$)
- Short-term Reliability: One week test-retest reliability = .70 for 11-14 year-olds
- Validity: Discriminates between referred and nonreferred youth, $p < .01$
- Citations: Achenbach, T.M. (1991). *Manual for the Youth Self-Report and 1991 Profile*. Burlington, VT: University of Vermont. Department of Psychiatry.
Song, L., Singh, J., & Singer, M. (1994). The Youth Self-Report Inventory: A study of its measurement fidelity. *Psychological Assessment*, 6, 236-245.

14 Years - Child

Standardized Procedure

Vineland Adaptive Behavior Scales (Parent Report)

- Measure: Child's current level of adjustment and functioning
- Scales: Communication, Daily Living, Socialization, Motor
- Coder Reliability: Interrater intraclass correlation = .98 ($N = 644$); same parent with 2 interviewers, 1-14 days apart, $r = .74$ ($N = 160$)
- Scale/Item Reliability: Split-half reliability at 20 and 48 months = .96 ($N = 484$); To be done at 10 years
- Short-term Reliability: Test-retest intraclass correlation = .98 ($N = 644$)
- Validity: Correlation of Vineland composite and ABIC average scale score = .58; and 5 scales of Kaufman ABC = .25 to .37.
- Citations: Sparrow, S. S., Balla, D. A., Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales Survey Form Manual (Interview Edition)*. Circle Pines, MN: American Guidance Service.

14 Years - Parents

Inventory/Questionnaire

Adult Temperament Questionnaire

- Measure: Temperament
- Factors (scales): Negative Affect (fear, frustration, sadness, discomfort), Effortful Control (activation control, attentional control, inhibitory control), Extraversion/Surgency (sociability, high intensity pleasure, positive affect), Orienting Sensitivity (neutral perceptual sensitivity, affective perceptual sensitivity, associative sensitivity)
- Scale/Item Reliability: Cronbach's alphas range from .75 to .85 for factor scales and from .60 to .79 for scales ($N = 258$)
- Short-term Reliability: Not available
- Validity: Not available

Citations: Derryberry, D. & Rothbart, M.K. (1988) Arousal, affect, and attention as components of temperament. *Journal of Personality and Social Psychology*, 55, 958-966.
Rothbart, M.K. Ahadi, S.A. & Evans, D.E. (2000) Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology*, 78, 122-135.

Center for Epidemiological Studies Depression Scale

Measure: Depressive symptomatology in community samples
Scales/Factors: Factors include: depressed affect, positive affect, and somatic/vegetative.
Scale/Item Reliability: Cronbach's alpha = .85; split-half correlations corrected for attenuation about .87
Short-term Reliability: Not available
Validity: Correlated about .60 with the Bradburn Negative Affect Scale, about -.20 with the Bradburn Positive Affect Scales, about .50 with the Langner 22-item Scale, and about .30 with disability days
Citations: Radloff, L.S. (1977) The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measures*, 3, 385-401.

Child's Report of Parental Behavior

Measure: Children's perception of each parent's behavior
Scales: Acceptance vs. rejection; psychological autonomy vs. psychological control; firm control vs. lax control
Scale/Item Reliability: Not available
Short-term Reliability: Five-week test-retest reliability coefficients for children's perceptions of mother's behavior = .79 for acceptance vs. rejection, .84 for psychological autonomy vs. psychological control, .93 for firm control vs. lax control; five-week test-retest reliability coefficients for children's perceptions of father's behavior = .79 for acceptance vs. rejection, .81 for psychological autonomy vs. psychological control, .77 for firm control vs. lax control
Citations: Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology*, 32, 472-476.
Schaefer, E. S. (1965). Children's reports of parental behavior, an inventory. *Child Development*, 36, 413-424.

Kerns Security Scale (Child Report)

Measure: Child's belief about a caregiver's trustworthiness, responsiveness, and physical and emotional availability
Scales: Caregiver's responsiveness and availability, child's reliance on the caregiver in stressful times, child's ease and interest in communication with the caregiver
Scale/Item Reliability: Cronbach's alpha = .93
Short-term Reliability: Two-week test-retest correlation = .75. Cronbach's alpha = .81 for time 1 and .87 for time 2
Validity: Security scale correlates with self-esteem ($r = .40$), peer acceptance ($r = .30$), behavior conduct ($r = .36$), scholastic competence ($r = .38$), and physical appearance ($r = .32$); security scale did not significantly correlate with athletic competence ($r = .19$) or GPA ($r = .12$)
Citations: Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescent= perceptions of security in the child-mother relationship. *Developmental Psychology*,

Maternal Perceived Stress Scale

- Measure: Appraisal of Stressfulness of current life situation
- Scale/Item Reliability: Cronbach's alphas = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)
- Short-term Reliability: 2 day span in undergraduates, $r = .85$ ($N = 82$)
- Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)
- Validity: Correlated with Impact of Life Events, $r = .24$ to .49; Depression, $r = .65$ to .76; Physical Symptoms, $r = .52$ to .65; Social Anxiety, $r = .37$ to .48
- Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

Parental Bonding Instrument (Child Report)

- Measure: Child's report of parental care and protection
- Scales: Care, protection
- Scale/Item Reliability: Not available
- Split-half Reliability: Correlations were .88 for care and .67 for protection ($N = 17$)
- Short-term Stability: Three-week test-retest correlation was .76 for care and .63 for protection ($N = 17$)
- Validity: Care scale correlates with interview ratings, $r = .77$ and .78; protection scale shows lower correlations with interview ratings, $r = .48$ and .50
- Citations: Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1-10.
Parker, G. (1983). *Parental overprotection: A risk factor in psychosocial development*. New York, NY: Grune & Stratton.

Parenting Stress Index

- Measure: Stress in the parent-child relationship. Identifies dysfunctional parenting and predicts the potential for parental behavior problems and child adjustment difficulties within the family system
- Scales: Child Domain: Distractibility/hyperactivity (DI), adaptability (AD), reinforces parent (RE), demandingness (DE), mood (MO), acceptability (AC); Parent Domain: Competence (CO), isolation (IS), attachment (AT), health (HE), role restriction (RO), depression (DP), spouse (SP); life stress (LS)
- Scale/Item Reliability: Cronbach's alpha ranged from .70 to .83 for the subscales of the Child Domain and from .70 to .84 for the subscales of the Parent Domain. Reliability coefficients for the two domains and the Total Stress scale were .90 or greater
- Short-term Stability: One- to three-month test-retest reliability = .63 for the Child Domain, .91 for the Parent Domain, and .96 for the Total Stress score ($N = 30$ mothers, clinical sample). Three-week test-retest reliability = .82 for the Child Domain and .71 for the Parent Domain ($N = 15$ mothers). Three-month test-retest reliability = .77 for the Child Domain, .69 for the Parent Domain, and .88 for the Total Stress score ($N = 54$ parents)
- Long-term Stability: One-year test-retest reliability = .55 for the Child Domain, .70 for the Parent Domain, and .65 for the Total Stress score ($N = 37$ mothers).
- Validity: Extensive evidence for construct and predictive validity provided in professional manual.
- Citations: Abidin, R. R. (1995). *The Parenting Stress Index Professional Manual*. Odessa, FL:

Parents of Adolescents Separation Anxiety Scale

- Measure: Parents' separation-related emotions
Scales: Anxiety about adolescent distancing, comfort with secure base role
Scale/Item Reliability: Cronbach's alphas for scales for mothers and fathers ranged between .81 and .86 ($N = 686$)
Short-term Reliability: Not available
Validity: Parental separation anxiety is associated with more parent-child conflict, mother's discomfort with closeness and dependence on others, father's anxiety about abandonment and rejection, lower adolescent-reported quality of attachment, and less differentiation ($N = 686$)
Citations: Hock, E., Eberly, M., Bartle-Haring, S., Ellwanger, P., & Widaman, K.F. (2001). Separation anxiety in parents of adolescents: Theoretical significance and scale development. *Child Development, 72*, 284-298.

Self-Perception of the Parental Role

- Measures: Mother's perceived parenting ability
Scales: Investment in Parental Role, Integration of Parenting and Working Role, Competence in Parental Role, Satisfaction in Parenting
Scale/Item Reliability: Cronbach's Alphas = .72, .76, .78, .80, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 373$)
Short-term Reliability: Test-retest (21-day) Reliabilities: $r = .82, .92, .86, \text{ and } .88$, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 53$ mothers of 18-month-old infants)
Validity: Scales show small, complex, significant relationships with measures of previous experience with infants, social networking, adult self esteem
Citations: MacPhee, D., Benson, J., & Bullock, D. (1986). *Influences on maternal self perception*. Poster presented at the International Conference on Infant Studies, Los Angeles, CA.

14 Years - Environment

Inventory/Questionnaire

Conflict Behavior Questionnaire (Child & Parent Reports)

- Measure: Adolescent and parental appraisal of conflict and negative family communication
Scales: Adolescent appraisal of parent, adolescent appraisal of dyad, maternal appraisal of adolescent, maternal appraisal of dyad
Scale/Item Reliability: Cronbach's alpha = .95 for adolescent appraisal of mother, .94 for adolescent appraisal of dyad, .88 for maternal appraisal of adolescent, and .90 for maternal appraisal of dyad
Short-term Stability: Not available
Validity: Correlates with mothers' and adolescents' negative attributions
Citations: Prinz, R.J., Foster, S., Kent, R.N., & O'Leary, D.K. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. *Journal of Applied Behavior Analysis, 12*, 691-700.
Grace, N.C., Kelley, M.L., & McCain, A.P. (1993). Attribution processes in mother-

adolescent conflict. *Journal of Abnormal Child Psychology*, 21(2), 199-211.

Hollingshead Four-Factor Index of Socioeconomic Status

Measure: Socioeconomic Status
Scales: Occupation rating, education rating, socioeconomic status rating
Convergent Validity: Correlation with other SES indexes: with Duncan's SEI, $r = .79$; with Siegel, $r = .73$
Criterion Validity: Correlation with measures of infant IQ: with Bayley at 18 months, $r = .29$; with Bayley at 24 months, $r = .41$; with McCarthy at 30 months, $r = .34$
Citations: Gottfried, A. W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85-92.
Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript. Yale University.
Bornstein, M. H., Hahn, C.-S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting, and child development: The Hollingshead Four-Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein and R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development. Monographs in parenting series* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum Associates.

McMaster Family Assessment Device (Child & Parent Reports)

Measure: Family competence in problem solving, communication, affective involvement, and behavior control
Scales: Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, general functioning
Scale/Item Reliability: Cronbach's alpha for problem solving = .74, communication = .75, roles = .72, affective responsiveness = .83, affective involvement = .78, behavior control = .72, general functioning = .92
Short-term Stability: One-week test-retest reliability correlation coefficients: Problem solving = .66, communication = .72, roles = .75, affective responsiveness = .76, affective involvement = .67, behavior control = .73, general functioning = .71
Concurrent Validity: Moderate correlations with other self-report measures of family functioning (FACES II, Family Unit Inventory).
Discriminant Validity: Differentiates significantly between clinician-rated healthy and unhealthy families
Citations: Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy*, 9, 171-180.
Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. L. (1985). The McMaster family assessment device: Reliability and validity. *Journal of Marital and Family Therapy*, 11, 345-356.

Revised Dyadic Adjustment Scale

Measure: Marital quality
Scales: Consensus (decision making, values, affection); Satisfaction (stability, conflict); Cohesion (activities, discussion); Total RDAS
Scale/Item Reliability: Cronbach's alpha = .90 for total score, ranging from .80 to .85 for scales; Spearman-Brown split-half reliability coefficient = .95 for total score, ranging from .80 to .89 for scales
Short-term Stability: Not available

Validity: Correlates with the Locke-Wallace Marital Adjustment Test (MAT) ($r = .68, p < .01$) and the DAS ($r = .97, p < .01$)

Criterion Validity: The RDAS correctly classified 81% of cases as distressed or nondistressed

Citations: Busby, D. M., Christensen, C., Crane, D. R., & Larson, J. H. (1995). A revision of the dyadic adjustment scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. *Journal of Marital and Family Therapy, 21*, 289-308.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-28.

Sibling Relationship Questionnaire Revised (Child & Parent Reports)

Measure: Components of sibling relationships completed by child and mother

Scales: Relative Status/Power; Warmth and Closeness; Conflict; and Rivalry

Scale/Item Reliability: Cronbach's alpha for competition = .63; all other subscales exceeded .70

Short-term Reliability: Mean ten-day test-retest reliability ($N = 94$ children) = .71, ranging from .58 to .86

Validity: Not available

Citations: Furman, W., & Buhrmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development, 56*, 448-461.

Social Support Scale for Children

Measure: Adolescent's perception of social support and regard from others

Scales: Parental support, classmate support, teacher support, close friend support

Scale/Item Reliability: Cronbach's alphas for scales range from .78 to .88 ($N = 421$)

Short-term Reliability: Not available

Validity: Scales correlate with global self-worth score from the Self Perception Profile for Children, parent support = .46, classmate support = .42, and friend support = .49

Citations: Harter, S. (1985). *The social support scale for children and adolescents*. Manual, University of Denver, CO.

18 Years – Child Inventory/Questionnaire

Child's Report of Parental Behavior – Report of Mother and Father

- Measure: Children's perception of each parent's behavior
- Scales: Acceptance vs. rejection; psychological autonomy vs. psychological control; firm control vs. lax control
- Scale/Item Reliability: Not available
- Short-term Reliability: Five-week test-retest reliability coefficients for children's perceptions of mother's behavior = .79 for acceptance vs. rejection, .84 for psychological autonomy vs. psychological control, .93 for firm control vs. lax control; five-week test-retest reliability coefficients for children's perceptions of father's behavior = .79 for acceptance vs. rejection, .81 for psychological autonomy vs. psychological control, .77 for firm control vs. lax control
- Citations: Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology, 32*, 472-476.
Schaefer, E. S. (1965). Children's reports of parental behavior, an inventory. *Child Development, 36*, 413-424.

Conflict Behavior Questionnaire – Report of Mother and Father

- Measure: Adolescent and parental appraisal of conflict and negative family communication
- Scales: Adolescent appraisal of parent, adolescent appraisal of dyad, maternal appraisal of adolescent, maternal appraisal of dyad
- Scale/Item Reliability: Cronbach's alpha = .95 for adolescent appraisal of mother, .94 for adolescent appraisal of dyad, .88 for maternal appraisal of adolescent, and .90 for maternal appraisal of dyad
- Short-term Stability: Not available
- Validity: Correlates with mothers' and adolescents' negative attributions
- Citations: Prinz, R.J., Foster, S., Kent, R.N., & O'Leary, D.K. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. *Journal of Applied Behavior Analysis, 12*, 691-700.
Grace, N.C., Kelley, M.L., & McCain, A.P. (1993). Attribution processes in mother-adolescent conflict. *Journal of Abnormal Child Psychology, 21*(2), 199-211.

Coping Scale for Children and Youth

- Measure: Children's coping strategies
- Scales: Assistance seeking; cognitive-behavioral problem-solving; cognitive avoidance; behavioral avoidance
- Scale/Item Reliability: Cronbach's alphas = .70 and higher for scales
- Short-term Stability: Test-retest reliability for assistance = .80; problem-solving = .80; cognitive avoidance = .81; behavioral avoidance = .73
- Concurrent Validity: Positively related to Kidcope (another measure of children's coping strategies) and to

perceived self-efficacy
Citations: Brodzinsky, D. M., Elias, M. J., Steiger, C., Simon, J., Gill, M., & Hitt, J. C. (1992). Coping scale for children and youth: Scale development and validation. *Journal of Applied Developmental Psychology, 13*, 195-214.

Emotional Autonomy Scale

Measure: Cognitive and affective components of adolescents' emotional autonomy
Scales: Perceives parents as people, parental deidealization, nondependency on parents, individuation
Scale/Item Reliability: Cronbach's alpha = .75 for total score and .51 to .63 for scale scores ($N = 865$)
Short-term Reliability: Not available
Validity: Based on Blos's theory of individuation
Citations: Steinberg, L., & Silverberg, S. B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development, 57*, 841-851.

EOM-EIS Identity Questionnaire

Measures: ego identity status
Scales: ideological domains (occupation, politics, religion and philosophical lifestyle) and interpersonal domains (friendship, dating, sex roles and recreation).
Scale/Item Reliability: Cronbach alphas: ranged from .62 to .75 on the ideology domains and from .58 to .80 on the interpersonal domains.
Short-term Reliability:
Validity: Convergent validity: ideological and interpersonal identity achievement subscale measures are correlated .46 for the total sample, .54 for the male sample, and .38 for the female sample.
Factorial validity: ranges from .47 to .91
Citations: Bennion, L. D., & Adams, G. R. (1986). A revision of the extended version of the objective measure of ego identity status: An identity instrument for use with late adolescents. *Journal of Adolescent Research, 1*, 183-198.

Erikson Psychosocial Stage Inventory

Measures: Based on Erikson's psychosocial stages
Scales: 6 subscales based on the first 6 of Erikson's stages. Each subscale has 12 items, half of which reflect successful and half unsuccessful resolution of the 'crisis' of the stage.
Scale/Item Reliability: for the pilot sample alpha coefficients were uniformly high across all subscales, ranging from .73 to .81. For the test sample, alpha coefficients were somewhat lower, but reached an adequate level, ranging from .57 to .75
Short-term Reliability:
Validity: Comparison of year 9 and year 11 groups showed, as expected, that older students scored higher in the positive direction on each of the subscales: Trust: $F(1, 618) = 6.78, p < 0.01$; Autonomy: $F(1, 618) = 10.98, p < 0.001$; Initiative: $F(1, 618) = 5.39, p < 0.05$; Industry: $F(1, 618) = 6.44, p < 0.05$; Identity $F(1, 618) = 10.60, p < 0.001$; Intimacy: $F(1, 618) = 22.23, p < 0.001$.
Citations: Rosenthal, D. A., Gurney, R. M., & Moore, S. M. (1981). From trust to intimacy: A

new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence*, 10, 525-537.

Kerns Security Scale – Report of Mother and Father

- Measure: Child's belief about a caregiver's trustworthiness, responsiveness, and physical and emotional availability
- Scales: Caregiver's responsiveness and availability, child's reliance on the caregiver in stressful times, child's ease and interest in communication with the caregiver
- Scale/Item Reliability: Cronbach's alpha = .93
- Short-term Reliability: Two-week test-retest correlation = .75. Cronbach's alpha = .81 for time 1 and .87 for time 2
- Validity: Security scale correlates with self-esteem ($r = .40$), peer acceptance ($r = .30$), behavior conduct ($r = .36$), scholastic competence ($r = .38$), and physical appearance ($r = .32$); security scale did not significantly correlate with athletic competence ($r = .19$) or GPA ($r = .12$)
- Citations: Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescent perceptions of security in the child-mother relationship. *Developmental Psychology*, 32, 457-466.

Markers of Adulthood

- Measure: Conceptions of the transition to adulthood
- Scales: Individualism, family capacities, norm compliance, biological transitions, legal/chronological, role transitions.
- Scale/Item Reliability: Reliabilities range from .42 to .88
- Short-term reliability: Not available
- Concurrent Validity: Not available
- Citations: Arnett, J.J. (2000). Emerging adulthood. A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469-480.
- Arnett, J.J. (2006). What does it mean to be an adult? Young people's conceptions of adulthood. In L. Balter & C. Tamis-LeMonda (Eds.), *Child psychology: A handbook of contemporary issues* (2nd ed.). New York: Psychology Press.

Inventory of the Dimensions of Emerging Adulthood

- Measures: Emerging adulthood
- Scales: identity exploration, experimentation/possibilities, negativity/instability, other-focused, and self-focused
- Scale/Item Reliability: Cronbach's alphas range from .70-.85
- Short-term Stability: One-month interval – ranged from .64-.76, with exception of "feeling in-between".
- Validity: Related to life satisfaction and identity measures.
- Citations: Reifman, A., Colwell, M.J., & Arnett, J.J. (2007). Emerging adulthood: Theory, assessment, and application. *Journal of Youth Development*, 2(1).

Sociomoral Reflection Measure B Short Form

Measure: Social and moral reasoning

Scales: Total sociomoral reflection maturity score

Scale/Item Reliability: Cronbach's alpha was .93 ($N = 384$)

Interrater Reliability: Correlations range from .94 to .99 ($N = 22$ to 24)

Short-term Reliability: Not available

Validity: Correlates with the Moral Judgement Interview, $r = .69$ ($N = 44$)

Citations: Basinger, K. S., Gibbs, J. C., & Fuller, D. (1995). Context and the measurement of moral judgement. *International Journal of Behavioral Development*, 18, 537-556

Optimism Scale

Measure: Dispositional optimism

Scales: Dispositional optimism

Scale/Item Reliability: Internal consistency = .76

Short-term Reliability: Thirteen-week test-retest reliability = .72

Convergent Validity: Scores correlate in the expected direction with theoretically similar constructs, e.g., depression, hopelessness, self-esteem, perceived stress, and locus of control.

Discriminant Validity: Magnitudes of correlations between scores and conceptually related measures are not too strong.

Construct Validity: Significantly correlated in the predicted direction with indices of physical and psychological well-being and relatively unrelated to measures of social desirability

Citations: Carver, C.S., & Scheier, M.F. (2002). Optimism. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of Positive Psychology* (pp.231-243). Oxford: University Press.
Hjelle, L., Belongia, C., & Nesser, J. (1996). Psychometric properties of the life orientation test and attributional style questionnaire. *Psychological Reports*, 78, 507-515.

Parental Bonding Instrument - Report of Mother and Father

Measures: bonding

Scales: care and overprotection

Scale/Item Reliability:

Short-term Reliability: Test re-test reliabilities: Pearson correlation coefficient of 0.761 ($P < 0.001$) was obtained for the 'care' scale, and 0.628 ($P < 0.001$)

Split-half reliability: a Pearson correlation coefficient of 0.879 ($P < 0.001$) was obtained for the 'care' scale and 0.739 ($P < 0.001$) for the overprotection scale.

Inter-rater reliability: coefficient on the 'care' dimension was 0.851 ($P < 0.001$) and 0.688 ($P < 0.001$) on the 'overprotection' dimension.

Validity: Concurrent Validity: the Pearson Correlation for the two 'care' measures were 0.772 ($P < 0.001$) for rater G.P. and 0.788 ($P < 0.001$) for rater H. T. and for the two 'overprotection' scores were 0.478 ($P < 0.001$) for rater G.P. and 0.505 ($P < 0.001$) for rater H. T.

Citations: Parker, G., Tupling, H., & Brown, L.B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1-10.

Personal Projects Analysis

- Measure: Personal projects that may reflect cognitive, affective, and behavioral aspects of human conduct
- Schemes: Content focus (academic, interpersonal, intrapersonal, recreational/hobbies, reading/cultural, gifts/holidays, travel, environmental adaptation, vocational, home activities, spiritual, and health/body); time frame; resource ecology; and morphological pattern
- Dimensions: Importance, enjoyment, difficulty, visibility, control, initiation, stress, time adequacy, outcome, self-identity, others' view, value congruency, positive impact, negative impact, progress, challenge, absorption
- Scale/Item Reliability: Not available
- Validity: Not available
- Citations: Little, B.R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behavior*, 15(3), 273-309.
- Nurmi, J., Salmela-Aro, K., & Koivisto, P. (2002). Goal importance and related achievement beliefs and emotions during the transition from vocational school to work: Antecedents and consequences. *Journal of Vocational Behavior*, 60, 241-261.
- Salmela-Aro, K., & Nurmi, J. (1997). Goal contents, well-being, and life context during transitions to university: A longitudinal study. *International Journal of Behavioral Development*, 20(3), 471-491.

Risk/Activities Questionnaire

- Measure: Questionnaire adapted from Center for Disease Control and Prevention's Youth Risk Behavior Survey (2005). Questions include engagement in both risk behaviors as well as positive activities such as civic and religious involvement.
- Scale/Item Reliability: not available
- Short-term Stability: not available
- Validity: not available
- Citations: <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>

Self-Perception Profile for Adolescents

- Measure: Adolescent self-perception in multiple domains
- Scales: Scholastic competence, social acceptance, athletic competence, physical appearance, job competence, romantic appeal, behavioral conduct, close friendships, self worth
- Scale/Item Reliability: Cronbach's alphas ranged from .74 to .92 in a sample of 9th graders ($N = 123$)
- Short-term Reliability: Not available
- Validity: Not available
- Citations: Harter, S. (1988). *The self-perception profile for adolescents*. Unpublished manual, University of Denver, Denver, CO.

Separation-Individuation for Adolescents

- Measure: Measures key dimensions of adolescent separation-individuation
- Scales: Separation anxiety, engulfment anxiety, dependency denial, practicing-mirroring, peer

enmeshment, healthy separation, nurturance seeking, teacher enmeshment, and rejection expectancy

- Scale/Item Reliability: For the clinical sample, seven of the subscales obtained Cronbach's alpha above .70. The exceptions were the Separation Anxiety and Healthy Separation subscales. For the nonclinical sample, all subscales except for Healthy Separation are above .70.
- Validity: Theoretical-substantive validity, internal-structural validity, and external criterion validity with the Million Adolescent Personality Inventory (MAPI)
- Citations: Levine, J.B., & Saintonge, S. (1993). Psychometric properties of the separation-individuation test of adolescence within a clinical population. *Journal of Clinical Psychology, 49(4)*, 492-507.
- Levine, J.B., Green, C.J., & Millon, T. (1986). The separation-individuation test of adolescence.. *Journal of Personality Assessment, 50(1)*, 123-137.

Social Support Scale for Children

- Measure: Adolescent's perception of social support and regard from others
- Scales: Parental support, classmate support, teacher support, close friend support
- Scale/Item Reliability: Cronbach's alphas for scales range from .78 to .88 ($N = 421$)
- Short-term Reliability: Not available
- Validity: Scales correlate with global self-worth score from the Self Perception Profile for Children, parent support = .46, classmate support = .42, and friend support = .49
- Citations: Harter, S. (1985). *The social support scale for children and adolescents*. Manual, University of Denver, CO.

Youth Self-Report Inventory

- Measure: Adolescent psychopathology
- Scales: Withdrawal, somatic complaints, anxious-depressed, social problems, thought problems, attention problems, delinquent behaviors, aggressive behaviors, externalizing scale, internalizing scale, total problem behavior scale, lie scale
- Scale/Item Reliability: Most scales had Cronbach's alphas between .70 and .89; thought problems and delinquent behaviors had alphas between .62 and .69 ($N = 413$)
- Short-term Reliability: One week test-retest reliability = .70 for 11-14 year-olds
- Validity: Discriminates between referred and nonreferred youth, $p < .01$
- Citations: Achenbach, T.M. (1991). *Manual for the Youth Self-Report and 1991 Profile*. Burlington, VT: University of Vermont. Department of Psychiatry.
- Song, L., Singh, J., & Singer, M. (1994). The Youth Self-Report Inventory: A study of its measurement fidelity. *Psychological Assessment, 6*, 236-245.

Child Behavior Checklist (Parent Report)

- Measure: Mother's rating of children's competencies and behavioral/emotional problems
- Scales: Three competence scales (Activities, Social, School); Total competence; Eight cross-informant syndromes (Aggressive Behavior, Anxious/Depressed, Attention Problems, Delinquent Behavior, Social Problems, Somatic Complaints, Thought Problems, Withdrawn); Three summary problem scores (Internalizing, Externalizing, Total)
- Scale/Item Reliability: Mean of correlations between all scale scores obtained over 7- to 15-day intervals = .88
- Short-term Stability: The CBCL Total Problem score has yielded a one-week test-retest reliability, $r = .93$

Discriminant Validity: All scales discriminate between referred and nonreferred children at $p < .01$

Convergent Validity: Significant correlations with corresponding scales of Connors (1973) and Quay-Peterson (1987) instruments.

Citations: Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

18 Years - Parent

Standardized Procedure

General Ability Measure for Adults

Measure: Measurement of nonverbal intellectual ability

Scales: Matching, Analogies, Sequence, and Construction

Scale/Item Reliability: Internal consistency = .90

Short-term Reliability: Two-six week test-retest reliability ($N = 86$) = .67

Validity: Correlations with other ability tests: WAIS-R (WAIS-R PIQ = .74, WAIS-R VIQ = .65, WAIS-R FSIQ = .75), K-BIT (K-BIT Matrices = .72, K-BIT Vocabulary = .54, K-BIT IQ = .70), Wonderlic = .70, and Shipley (Vocabulary = .56, Abstraction = .73, Shipley Total = .72). Correlations with achievement: Nelson-Denny Total Reading Test = .52 ($p < .01$)

Citations: Bardos, A.N. (2001). General ability measures for adults (GAMA). In W.I. Dorfman & M Hersen (Eds.), *Understanding Psychological Assessment* (pp. 43-58). New York: Kluwer Academic/Plenum Publishers.

Parental Stress Index

Measures: Parenting stress among parents of adolescents

Scales: Yields scores on three domains, namely the Adolescent Domain (AD), Parent Domain (PD), and Adolescent-Parent Relationship Domain (APRD), a Life Stressors (LS) Scale; and an Index of Total Parenting Stress (TS). Both AD and PD contain four subscales. THE AD subscales include Moodiness/Emotional Lability (MEL), Social Isolation/Withdrawal (ISO), Delinquency/Antisocial (DEL), and Failure to Achieve or Persevere (ACH). The PD subscales include Life Restrictions (LFR), Relationship With Spouse/Partner (REL), Social Alienation (SOC), and Incompetence/Guilt (INC).

Scale/Item Reliability: Internal Consistency: All subscale alpha coefficients exceed .80, with the majority ranging from the high .80s to .90. all alpha coefficients for the SIPA domains and TS scale exceed .90.

Short-term Reliability: Test-Retest Reliability: Forty-six parents who initially completed the SIPA were subsequently asked to complete a second protocol approximately 4 weeks later. The test-retest reliability coefficients were .92, for the Adolescent Domain, .87 for the Parent Domain, and .91 for the Adolescent-Parent Relationship Domain, and .93 for the Index of Total Parenting Stress. Test-Retest Reliability coefficients ranged from .75 to .91 for the Adolescent Domain subscales, and .74 to .85 for the Parent Domain subscales.

Validity: Content Validity: A rational-empirical approach was used to develop the SIPA. Content validity of the measure is a natural by-product of this approach. Convergent Validity: Parenting stress in relation to the quality of parents'

perceptions of their parenting alliance. PAI scores were -.48 for the Adolescent domain, -.59 for the Parent Domain, -.42 for the Adolescent-Parent Relationship Domain, and -.57 for the Index of Total Parenting Stress.

Discriminant Validity: investigated by comparing score means between several groups expected to differ in their levels of parenting stress.

Citations: Sheras, P. L., Abidin, R. R., & Konold, T. R. (1998). *Stress Index for Parents of Adolescents: Professional manual*. Lutz, Florida: Psychological Assessment Resources, Inc.

Self-Perception of the Parental Role

Measures: Mother's perceived parenting ability

Scales: Investment in Parental Role, Integration of Parenting and Working Role, Competence in Parental Role, Satisfaction in Parenting

Scale/Item Reliability: Cronbach's Alphas = .72, .76, .78, .80, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 373$)

Short-term Reliability: Test-retest (21-day) Reliabilities: $r = .82, .92, .86,$ and $.88$, for Investment, Integration, Competence, and Satisfaction, respectively ($N = 53$ mothers of 18-month-old infants)

Validity: Scales show small, complex, significant relationships with measures of previous experience with infants, social networking, adult self esteem

Citations: MacPhee, D., Benson, J., & Bullock, D. (1986). *Influences on maternal self perception*. Poster presented at the International Conference on Infant Studies, Los Angeles, CA.

Center for Epidemiological Studies Depression Scale

Measure: Depressive symptomatology in community samples

Scales/Factors: Factors include: depressed affect, positive affect, and somatic/vegetative.

Scale/Item Reliability: Cronbach's alpha = .85; split-half correlations corrected for attenuation about .87

Short-term Reliability: Not available

Validity: Correlated about .60 with the Bradburn Negative Affect Scale, about -.20 with the Bradburn Positive Affect Scales, about .50 with the Langner 22-item Scale, and about .30 with disability days

Citations: Radloff, L.S. (1977) The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measures*, 3, 385-401.

Perceived Stress Scale

Measure: Appraisal of Stressfulness of current life situation

Scale/Item Reliability: Cronbach's alphas = .84 ($N = 332$), .85 ($N = 114$), and .86 ($N = 64$)

Short-term Reliability: 2 day span in undergraduates, $r = .85$ ($N = 82$)

Long-term Stability: 6 weeks before and after smoking cessation, $r = .55$ ($N = 64$)

Validity: Correlated with Impact of Life Events, $r = .24$ to $.49$; Depression, $r = .65$ to $.76$; Physical Symptoms, $r = .52$ to $.65$; Social Anxiety, $r = .37$ to $.48$

Citations: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

Child Rating Questionnaire (Parent Report)

Measure: Mother's rating of child's helpfulness, sharing behavior, cooperativeness, empathy, and emotional expressiveness

Scales: Helpfulness, Sharing Behavior, Cooperativeness, Empathy, Emotional Expressiveness

Scale/Item Reliability: Cronbach's alpha for teachers = .84 for helpfulness, .85 for sharing behavior, .85 for cooperative behavior, .74 for empathy, .78 for emotional expressiveness; Cronbach's alpha for parents = .80 for helpfulness, .34 for sharing behavior, .79 for cooperative behavior, .65 for emotional expressiveness

Short-term Stability: Not available

Validity: Not available

Citations: Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development*, 67, 449-470.

Weir, K., Stevenson, J., & Graham, P. (1980). Behavioral deviance and teacher ratings of prosocial behavior. *Journal of the American Academy of Child Psychiatry*,

Buck, R. (1977). Nonverbal communication accuracy in preschool children: Relationships with personality and skin conductance. *Journal of Personality and Social Psychology*, 35, 225-236.

Strayer, J. (1985, August). *Children's affect and empathy in response to TV dramas*. Paper presented at the meeting of the American Psychological Association, Los Angeles, CA.

Parents of Adolescents Separation Anxiety Scale

Measure: Parents' separation-related emotions

Scales: Anxiety about adolescent distancing, comfort with secure base role

Scale/Item Reliability: Cronbach's alphas for scales for mothers and fathers ranged between .81 and .86 ($N = 686$)

Short-term Reliability: Not available

Validity: Parental separation anxiety is associated with more parent-child conflict, mother's discomfort with closeness and dependence on others, father's anxiety about abandonment and rejection, lower adolescent-reported quality of attachment, and less differentiation ($N = 686$)

Citations: Hock, E., Eberly, M., Bartle-Haring, S., Ellwanger, P., & Widaman, K.F. (2001). Separation anxiety in parents of adolescents: Theoretical significance and scale development. *Child Development*, 72, 284-298.

18 Years - Environment

Inventory/Questionnaire

Conflict Behavior Questionnaire (Child & Parent Reports)

Measure: Adolescent and parental appraisal of conflict and negative family communication

Scales: Adolescent appraisal of parent, adolescent appraisal of dyad, maternal appraisal of adolescent, maternal appraisal of dyad

Scale/Item Reliability: Cronbach's alpha = .95 for adolescent appraisal of mother, .94 for adolescent appraisal of dyad, .88 for maternal appraisal of adolescent, and .90 for maternal appraisal of dyad

Short-term Stability: Not available

Validity: Correlates with mothers' and adolescents' negative attributions

- Citations: Prinz, R.J., Foster, S., Kent, R.N., & O'Leary, D.K. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. *Journal of Applied Behavior Analysis, 12*, 691-700.
- Grace, N.C., Kelley, M.L., & McCain, A.P. (1993). Attribution processes in mother-adolescent conflict. *Journal of Abnormal Child Psychology, 21*(2), 199-211.

McMaster Family Assessment Device (Child & Parent Reports)

- Measure: Family competence in problem solving, communication, affective involvement, and behavior control
- Scales: Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, general functioning
- Scale/Item Reliability: Cronbach's alpha for problem solving = .74, communication = .75, roles = .72, affective responsiveness = .83, affective involvement = .78, behavior control = .72, general functioning = .92
- Short-term Stability: One-week test-retest reliability correlation coefficients: Problem solving = .66, communication = .72, roles = .75, affective responsiveness = .76, affective involvement = .67, behavior control = .73, general functioning = .71
- Concurrent Validity: Moderate correlations with other self-report measures of family functioning (FACES II, Family Unit Inventory).
- Discriminant Validity: Differentiates significantly between clinician-rated healthy and unhealthy families
- Citations: Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy, 9*, 171-180.
- Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. L. (1985). The McMaster family assessment device: Reliability and validity. *Journal of Marital and Family Therapy, 11*, 345-356.

Perception of Family Difference Scale (PFDS)

- Measure: Parental beliefs about the role and function of family members and the family unit in adopted families compared to biological families.
- Scales: Child Functioning, Parent Functioning, Family Functioning
- Scale/Item Reliability: Cronbach's alphas for mothers and fathers in the full sample ranged from .84 to .94 at 10 years and from .82 to .95 at 18 years.
- Short-term Stability: Not available
- Discriminant Validity: Not available
- Convergent Validity: Not available
- Citations: Suwalsky, J. T. D., Hendricks, C., & Bornstein, M. H. (2005). Families by adoption and birth: Comparisons of Children's Behavior, Parenting Stress and Family Differences. Poster presented at the Biennial Meeting of the Society for Research in Child Development, Atlanta, GA.
- Talen, M. R., Pinderhughes, E. E., Groze, V. K., Schwartzman, J., & Chen, M. (March, 1995). Acknowledging difference in adoptive families: Helpful or harmful for adoptive family functioning? Paper presented at the meeting on cognitions and adjustment among children and families united through special needs adoptions, symposium at the Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

Sibling Relationship Questionnaire Revised (Child & Parent Reports)

- Measure: Components of sibling relationships completed by child and mother
- Scales: Relative Status/Power; Warmth and Closeness; Conflict; and Rivalry
- Scale/Item Reliability: Cronbach's alpha for competition = .63; all other subscales exceeded .70
- Short-term Reliability: Mean ten-day test-retest reliability ($N = 94$ children) = .71, ranging from .58 to .86
- Validity: Not available
- Citations: Furman, W., & Buhrmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development*, 56, 448-461.

General: both children and parents complete:

Social Desirability Scale (Crowne-Marlowe)

- Measure: Tendency to reply to questions in a socially desirable fashion
- Scales: Socially desirable attitude and traits
- Scale/Item Reliability: Internal consistency coefficient Kuder-Richardson 20 = .88
- Short-term Stability: One-month test-retest reliability = .89
- Discriminant Validity: Low correlation (.35) was found with Edwards social desirability scale
- Convergent Validity: Correlates with MMPI lie scale, $r = .54$ ($p < .01$)
- Citations: Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 963-968.

References

- BECKER, G. S. & TOMES, N. 1976. Child Endowments and Quantity and Quality of Children. *Journal of Political Economy*, 84, S143-S162.
- BJORKLUND, A. & SALVANES, K. G. 2011. Education and Family Background: Mechanisms and Policies. *Handbook of the Economics of Education, Vol 3*, 3, 201-247.
- BORNSTEIN, M. H. 2015. Children's parents. In: LERNER, R. M. (ed.) *Ecological Settings and Processes in Developmental Systems. Volume 4 of the Handbook of Child Psychology and Developmental Science*. 7 ed.: Hoboken, NJ: Wiley.
- BORNSTEIN, M. H., PUTNICK, D. L., COSTLOW, K. M., & SUWALSKY, J. T. D. 2019. Long-term recall in European American mothers moderated by developmental domain, child age, person, and metric of agreement. *Applied Developmental Science*.
- BUCHANAN, A. & ROTKIRCH, A. 2018. Twenty-first century grandparents: global perspectives on changing roles and consequences. *Contemporary Social Science*, 13, 131-144.
- CAPALDI, D. M., TIBERIO, S. S., PEARS, K. C., KERR, D. C. R. & OWEN, L. D. 2019. Intergenerational associations in physical maltreatment: Examination of mediation by delinquency and substance use, and moderated mediation by anger. *Dev Psychopathol*, 31, 73-82.
- CASE, A., LUBOTSKY, D. & PAXSON, C. 2002. Economic status and health in childhood: The origins of the gradient. *American Economic Review*, 92, 1308-1334.
- CONDLIFFE, S. & LINK, C. R. 2008. The Relationship between Economic Status and Child Health: Evidence from the United States. *American Economic Review*, 98, 1605-1618.
- DEARDEN, L., SIBIETA, L., SYLVA, K 2011. The socio-economic gradient in early child outcomes: evidence from the Millennium Cohort Study. *Longitudinal and Life Course Studies*, 2, 19-40.
- DIXON, L., BROWNE, K. & HAMILTON-GIACHRITSIS, C. 2005. Risk factors of parents abused as children: a mediational analysis of the intergenerational continuity of child maltreatment (Part I). *Journal of Child Psychology and Psychiatry*, 46, 47-57.
- FRIEDMAN, E. M. & MARE, R. D. 2014. The Schooling of Offspring and the Survival of Parents. *Demography*, 51, 1271-1293.
- FRIJTERS, P., JOHNSTON, D. W., SHAH, M. & SHIELDS, M. A. 2013. Intrahousehold Resource Allocation: Do Parents Reduce or Reinforce Child Ability Gaps? *Demography*, 50, 2187-2208.
- HERNANDEZ-ALAVA, M. & POPLI, G. 2017. Children's Development and Parental Input: Evidence From the UK Millennium Cohort Study. *Demography*, 54, 485-511.
- HUGHES, M. E., WAITE, L. J., LAPIERRE, T. A. & LUO, Y. 2007. All in the family: the impact of caring for grandchildren on grandparents' health. *J Gerontol B Psychol Sci Soc Sci*, 62, S108-19.
- JENSEN, A. C. & MCHALE, S. M. 2015. What makes siblings different? The development of sibling differences in academic achievement and interests. *J Fam Psychol*, 29, 469-78.
- KELLY, Y., SACKER, A., DEL BONO, E., FRANCESCONI, M. & MARMOT, M. 2011. What role for the home learning environment and parenting in reducing the socioeconomic gradient in child development? Findings from the Millennium Cohort Study. *Archives of Disease in Childhood*, 96, 832-U77.
- KUCZYNSKI, L. & DE MOL, J. 2015. Dialectical models of socialization. . *Handbook of child psychology and developmental science* 7th ed.: Hoboken, NJ: Wiley.
- LIU, H. & ZENG, J. 2009. Genetic ability and intergenerational earnings mobility. *Journal of Population Economics*, 22, 75-95.
- LUNDBORG, P. & MAJLESI, K. 2018. Intergenerational transmission of human capital: Is it a one-way street? *J Health Econ*, 57, 206-220.
- MACHIN, S., SALVANES, K. G. & PELKONEN, P. 2012. Education and Mobility. *Journal of the European Economic Association*, 10, 417-450.

- MADDEN, V., DOMONEY, J., AUMAYER, K., SETHNA, V., ILES, J., HUBBARD, I., GIANNAKAKIS, A., PSYCHOGIOU, L. & RAMCHANDANI, P. 2015. Intergenerational transmission of parenting: findings from a UK longitudinal study. *European Journal of Public Health*, 25, 1030-1035.
- MARE, R. D. 2011. A multigenerational view of inequality. *Demography*, 48, 1-23.
- MONK, C., LUGO-CANDELAS, C. & TRUMPPFF, C. 2019. Prenatal Developmental Origins of Future Psychopathology: Mechanisms and Pathways. *Annual Review of Clinical Psychology*, Vol 15, 15, 317-344.
- MOULTON, V., MCELROY, E, RICHARDS, M, FITZSIMONS, E, NORTHSTONE, K, CONTI, G, PLOUBIDIS, G.B., SULLIVAN, A 2019. A guide to the measures of cognitive ability in the CLOSER British birth cohort studies. . *London, UK: CLOSER*, Mimeo.
- PITT, M. M., ROSENZWEIG, M. R. & HASSAN, M. N. 1990. Productivity, Health, and Inequality in the Intrahousehold Distribution of Food in Low-Income Countries. *American Economic Review*, 80, 1139-1156.
- PLOMIN, R. & DANIELS, D. 1987. Why Are Children in the Same Family So Different from One Another. *Behavioral and Brain Sciences*, 10, 1-16.
- SILVERSTEIN, M. & BENGTON, V. L. 1991. Do Close Parent-Child Relations Reduce the Mortality Risk of Older Parents. *Journal of Health and Social Behavior*, 32, 382-395.