Documentation of MoBa Instruments
(as used in Q1 to Q-8 year)

The Norwegian Mother and Child Cohort Study (MoBa)

This document describing the instruments used to construct the questionnaire has not been finally quality controlled. The document may contain some minor inaccuracies and will be subjected to revision. If you have any comments that may improve this document contact mobaadm@fhi.no

Version	Date	Performed by	Description
1.0	March 2016	Fufen Jin	
1.1	14.04.2020	Turid S. Solberg	Corrections to chapter Child Development Inventory (CDI) - *Gross- and Fine Motor skills subscales*

LIST OF CONTENT

Model structure of what is presented per instrument/section

Instrument

1. **Name of original instrument/question:**
   Original name of scale (*no name* if only single question)
   List wording of questions included in the section (with number from questionnaire in front) and write response categories (with values used in the dataset)

2. **Description of original scale or selection of items used**
   Description of analytical approaches for selecting just a sample of items from a scale

   If selection of established short version, make referral to literature and/or use
   Where does the Q/scale come from, what is it meant to measure. Description of number of items, subscales. Where the Q/scale has been used and any information that give insight into what instrument this is.
   Primary references of the instrument as well as important secondary publications if relevant.

3. **Rationale for choosing the instrument:**
   What is it meant to measure and IF RELEVANT: Why this is a good measure.

4. **Modifications:**
   Describe modifications during the study from one version to another.
   Write if omitted or added from one version to another

An overview of the MoBa questionnaires

Table 1. An overview of the MoBa questionnaires

ABBREVIATION	DESCRIPTION
Q1	Questionnaire to mothers at 15th week of gestation
Q2*	Questionnaire to mothers at 22nd week of gestation
Q3	Questionnaire to mothers at 30th week of gestation
Q4	Questionnaire to mothers when the child is 6 months old
Q5	Questionnaire to mothers when the child is 18 months old
Q6	Questionnaire to mothers when the child is 36 months old
Q-5year	Questionnaire to mothers when the child is 5 years old
Q7*	Questionnaire to mothers when the child is 7 years old
Q-8year	Questionnaire to mothers when the child is 8 years old
Q-Far	Questionnaire to fathers at 15th week of gestation
Q-Cc	Questionnaire to childcare personnel when the child is 5 years old

* Q2 consists of MoBa single questions exclusively about pregnant women's diet. It is thus not of concern to this document.
* Q7 consists of MoBa single questions exclusively about the mother and the child's lifestyle and health problems. It is thus not of concern to this document.

Table 2. An overview of the versions of the MoBa questionnaires and the percentage (%) that have filled out in each version (per Dec. 2014)

Q1	Q3	Q4	Q5	Q6	Q-5year	Q-8year	*Q-far	Q-Cc
1A: 2,5	3A: 4,7	4A: 8,9	5A: 6,6	6A: 2,1	5yearA: 45,3	8yearA: 20,3	farA: 7,4	CcA:
1B: 20,0	3B: 0,9	4B: 38,5	5B: 17,0	6B: 11,9	5yearB: 54,7	8yearB: 19,2	farB: 48,0	CcB:
1C: 53,0	3C: 66,9	4F: 16,4	5C: 30,9	6C: 57,3		8yearC: 59,4	farD: 38,3	
1E: 24,5	3E: 27,5	4G: 13,4	5D: 22,8	6D: 18,6		*8yearKORT: 1,2	farE: 6,3	
		4H: 22,9	5E: 22,7	*6W: 8,8				

* 6W is the web version. It is the same as 6C. Thus in this documentation, Q6 is taken to have only 4 versions: 6A, 6B, 6C and 6D.
* 8yearKORT only contains questions about the child; the questions about the mother as found in other versions are not included. It is thus not of concern in documenting the instruments used for the parents.
*Q-farA is the pilot version and not scanned; farD is the same as farE. Thus in this documentation, Q-far is taken to have only 2 versions: farB and farD.

Parental mental health

Satisfaction With Life Scale (SWLS)

1. Name of original scale: The Satisfaction With Life Scale (SWLS)

	Do you agree or disagree with the following statements?	Response options
1	In most ways my life is close to my ideal	1- Strongly disagree 2- Disagree 3- Slightly disagree 4- Neither agree nor disagree 5- Slightly agree 6- Agree 7- Strongly agree
2	The conditions of my life are excellent	
3	I am satisfied with my life	
4	So far I have gotten the important things I want in life	
5	If I could live my life over, I would change almost nothing	

The instrument was used in all versions of Q1, Q3, Q4, Q-5year, and Q-far. It was also used in all versions of Q6 except for version A.

Section No. in different versions of the questionnaires

Q1	1A:130	1B:126	1C:126	1E:133	
Q3	3A:114	3B:126	3C:126	3E:129	
Q4	4A:78	4B:89	4F:89	4G:90	4H:96
Q6	6A:N/A	6B:73	6C:73	6D:73	
Q-5year	5yearA:51	5yearB:54			
Q-8year	8yearA:50	8yearB:50	8yearC:50		
Q-far	farB:71	farD:71			

2. Description of original instrument: **Satisfaction With Life Scale (SWLS)**

The SWLS (Diener et al., 1985) is a 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. All answers are scored on a 7-point scale from 'strongly disagree' (1) to 'strongly agree' (7).

Psychometric Information:

Internal consistency (Cronbach's alpha) for the SWLS is between .79 and .89. Test-retest coefficients are between .84 and .54, with the decline of stability of the scale over longer periods. The SWLS demonstrates adequate convergence with related measures (r=.28~.82), and it has been shown to have potential as a cross-cultural index of life satisfaction (Diener et al., 1985; Pavot & Diener, 1993; Pavot, et al., 1993; Shigehiro, 2006; Vittersø, Røysamb & Diener, 2002).

Base References/Primary Citations:

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment* 49: 71-75.

Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment,* 5, 164-172.

Pavot, W., Diener, E., Colvin, R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of self-report well-being measures. *Journal of Personality Assessment* 57: 149-161.

Shigehiro, O. (2006). The concept of life satisfaction across culture: An IRT analysis. *Journal of Research in Personality* 40(4): 411-423.
Vittersø, J., Røysamb, E., & Diener, E. (2002). The concept of life satisfaction across cultures: Exploring its diverse meaning and relation to economic wealth. In E. Gullone & R. Cummins (Eds.), *The universality of subjective wellbeing indicators. A multidisciplinary and multi-national perspective* (pp. 81–103). Dordrecht, the Netherlands: Kluwer Academic Publishers.

3. **Rationale for choosing the questions:**
   The Satisfaction With Life Scale is a well-established measure of life satisfaction.

4. **Revision during the data collection period:**
   The instrument was used in all versions of Q6 except for version 6A. No further revisions have been made.

Relationship Satisfaction scale (RS)

1. Name of original scale: The Relationship Satisfaction scale (RS)

Short version	Full scale	How well do these statements describe your relationship?	Response options
	1	I have a close relationship with my spouse/partner	1-Strongly agree 2-Agree 3-Slightly agree 4-Slightly disagree 5-Disagree 6-Strongly disagree
1	2	My partner and I have problems in our relationship	
2	3	I am very happy with our relationship	
3	4	My partner is generally understanding	
	5	I often consider ending our relationship	
4	6	I am satisfied with my relationship with my partner	
	7	We frequently disagree on important decisions	
	8	I have been lucky in my choice of a partner	
5	9	We agree on how children should be raised	
	10	I believe my partner is satisfied with our relationship	

The 10-item full scale was used in all versions of Q3, Q4 and Q5. It was also used in all versions of Q1 except for version A.
The 5-item short version was used in all versions of Q6, Q-5year and Q-far.

Section No. in different versions of the questionnaires

Q1	Q1A:N/A	1B:127	1C:127	1E:134	
Q3	3A:110	3B:122	3C:122	3E:125	
Q4	4A:76	4B:87	4F:87	4G:88	4H:94
Q5	5A:84	5B:91	5C:91	5D:92	5E:95
Q6	6A:68	6B:69	6C:69	6D:69	6W:69
Q-5year	5yearA:49	5yearB:52			
Q-far	farB:38	farD:74			

2. Description of original instrument: The Relationship Satisfaction Scale (RSS)

The RSS is a 10-item scale developed originally in Norwegian for the MoBa. The scale is based on core items used in previously developed measures of marital satisfaction and relationship quality (e.g. Blum & Mehrabian, 1999; Henrick, 1988; Snyder, 1997). All answers are scored on a 6-point scale from 'strongly agree' (1) to 'strongly disagree' (6).

Psychometric Information:

Internal reliability of the RS10 is high (alpha: .85-.90). Confirmatory factor analyses provide evidence for a unidimensional structure, high loadings and good fit. The RSS correlates .92 with the Quality of Marriage Index (QMI: Norton, 1983). Predictive validity is evidenced by ability to predict future break-up/divorce and life satisfaction (Dyeardal et al., 2011; Røsand, et al., 2013; Røysamb, Vittersø & Tambs, 2014). The 5-item short version (RS5) was empirically derived by identifying the best items in terms of accounting for variance in the full sum-score index. Multiple regression and factor analyses were used (Røysamb, Vittersø & Tambs, 2014). The short version correlates .97 with the full scale.

Base References/Primary Citations:

Blum, J. & Mehrabian, A. (1999). Personality and temperament correlates of marital satisfaction. *Journal of Personality* 67 (1): 93-125.

Dyeardal, G.M., Røysamb, E., Nes, R. B. & Vittersø, J. (2011). Can a happy relationship predict a happy life? A population-based study of maternal well-being during the life transition of pregnancy, infancy, and toddlerhood. *Journal of Happiness Studies 12*(6): 947- 962.

Gustavson, K., Nilsen, W., Ørstavik, R. & Røysamb, E. (2014). Relationship quality, divorce, and well-being: Findings from a three-year longitudinal study. *The Journal of Positive Psychology* 9(2): 163-174.

Henrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family 50*: 93-98.

Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family 45*: 141-151.

Røsand, G-M. B., Slinning, K., Røysamb, E. & Tambs, K. (2013). Relationship dissatisfaction and other risk factors for future relationship dissolution: a population-based study of 18,523 couples. *Social Psychiatry and Psychiatric Epidemiology 49*(1): 109-119.

Røysamb, E., Vittersø, J. & Tambs, K. (2014). The Relationship Satisfaction scale: Psychometric properties. *Norwegian Journal of Epidemiology [Norsk Epidemiologi]* 24(1-2): 187-194.

Snyder, D. K. (1997). *Marital Satisfaction Inventory–Revised (MSI-R) Manual*. Los Angeles: Western Psychological Services.

3. Rationale for choosing the questions:

Partner relationship is considered a central aspect of family life. Relationship satisfaction is both an outcome *per se* and a potentially important predictor of mental health, well-being, divorce, and child-rearing.

4. Revision during the data collection period:

The instrument was used in all versions of Q1 except for version A. No further revisions have been made.

(Hopkins) Symptoms Checklist-25 (SCL-25)

1. Name of original scale: The (Hopkins) Symptoms Checklist-25 (SCL-25)

SCL-5	SCL-8	Have you been bothered by any of the following during the last two weeks?	Response options
1	1	Feeling fearful	1-Not bothered 2-A little bothered 3-Quite bothered 4-Very bothered
2	2	Nervousness or shakiness inside	
3	3	Feeling hopeless about the future	
4	4	Felling blue	
5	5	Worrying too much about things	
	6	Feeling everything is an effort	
	7	Feeling tense or keyed up	
	8	Suddenly scared for no reason	

The SCL-8 was used in all versions of Q3, Q5, Q6, Q-5year, Q-8year, Q-far, and all versions of Q4 except for version A.
The SCL-5 was used in all versions of Q1 and version A of Q4.

Section No. in different versions of the questionnaires

Q1	1A:136	1B:131	1C:131	1E:138	
Q3	3A:111	3B:123	3C:123	3E:126	
Q4	4A:82	4B:93	4F:93	4G:94	4H:100
Q5	5A:91	5B:98	5C:98	5D:95	5E:102
Q6	6A:69	6B:70	6C:70	6D:70	6W:70
Q-5year	5yearA:48	5yearB:51			
Q-8year	8yearA:52	8yearB:52	8yearC:52		
Q-far	farB:32	farD:66			

2. Description of original instrument: The Hopkins Symptoms Checklist-25 (SCL-25).

The Hopkins Symptoms Checklist with 90 items (SCL-90) measures several types of symptoms of mental disorders, two of which are anxiety and depression. The instrument was originally designed by Derogatis, Lipman & Covi (1973) at Johns Hopkins University. The SCL-25 was derived from the SCL-90 and measures symptoms of anxiety (10 items) and depression (15 items) (Hesbacher, et al., 1980). Response categories are the same for all items: "not at all, bothered," "a little bothered," "quite a bit bothered," "extremely bothered," rated 1 to 4, respectively. Short versions were developed for MoBa by stepwise regressing the items om the total scores (anxiety, depression and global scores) in an available data material (Tambs & Moum, 1993) as described by Tambs & Røysamb (2014). The combinations of items in the short versions that gave the maximum correlation between the short version scores and the original scores were chosen. Five of the selected items constitute the short version SCL-5, and eight of the selected items constitute the short version SCL-8.

Psychometric Information:

A concordance rate of 86.7% was demonstrated between the assessment by the physician and the patient's own rating of distress on the SCL-25 (Hesbacher, et al., 1980). Using and available data material (Tambs & Moum, 1993), the short version scores were estimated to correlate 0.92 (SCL-5) and 0.94 (SCL-8) with the total score from the original instrument. The correlations between the SCL-8 anxiety and depression scores and the original anxiety and depression scores were 0.90 and 0.92, respectively (Tambs & Røysamb, 2014). The alpha reliability was estimated at 0.85 for SCL-5 and 0.88, 0.78 and 0.82 for the SCL-8 total, anxiety and depression scores,

respectively (Tambs & Røysamb, 2014). Sensitivity and specificity for SCL-5 have been estimated at 82% and 96 % (Strand, et al., 2003).

Base References/Primary Citations:

Derogatis, L.R., Lipman, R.S. & Covi L. 1973. The SCL-90: an outpatient psychiatric rating scale. *Psychopharmacology Bulletin* 9: 13-28.

Hesbacher PT, Rickels R, Morris RJ, Newman H, & Rosenfeld MD. 1980. Psychiatric illness in family practice. *Journal of Clinical Psychiatry* 41: 6-10.

Strand, B.H., Dalsgard, O.S., Tambs, K., & Rognerud, M. 2003. Measuring the mental health status of the Norwegian population: A comparison of the instrument SCL-25, SCL-10, SCL-5 and MHI-5 (SF-36). *Nordic Journal of Psychiatry* 57: 113-118.

Tambs, K. & Moum, T. 1993. How well can a few questionnaire items indicate anxiety and depression? *Acta Psychiatrica Scandnavica* 87: 364-367.

Tambs, K. & Røysamb E. 2014. Selection of questions to short-form versions of original psychometric instruments in MoBa. *Norwegian Journal of Epidemiology [Norsk Epidemiologi]* 24:195-201.

3. **Rationale for choosing the questions:**
   Symptom Check List and its short versions have proven to be a brief, valid and reliable measure of mental distress (Tambs & Moum, 1993).

4. **Revision during the data collection period:**
   No revisions have been made.

Rosenberg Self-Esteem Scale (RSES)

1. Name of original Scale: Selective questions from the Rosenberg Self-Esteem Scale (RSES)

	How do you feel about yourself?	Response options
1	I have a positive attitude toward myself	1-Agree completely 2-Agree 3-Disagree 4-Disagree completely
2	I feel completely useless at times	
3	I feel that I do not have much to be proud about	
4	I feel that I am a valuable person, as good as anyone else	

The 4-item RSES short version was used in all versions of Q1, Q3, Q4, Q5 and Q-far. It was also used in all versions of Q6, except for version A.

Section No. in different versions of the questionnaires

Q1	1A:139	1B:134	1C:134	1E:141	
Q3	3A:115	3B:127	3C:127	3E:130	
Q4	4A:81	4B:92	4F:92	4G:93	4H:99
Q5	5A:90	5B:97	5C:97	5D:98	5E:101
Q6	Q6A:N/A	6B:74	6C:74	6D:74	6W:74
Q-far	farB:34	farD:69			

2. Description of original Instrument: The Rosenberg Self-Esteem Scale (RSES)

The RSES (Rosenberg, 1965; 1986) is a 10-item scale, intended to measure global self-esteem. In the original version, half of the items are positively worded, while the other half negatively worded. Four of the selected items in this section constitute the short version of RSES (Tambs, 2004). Four response categories range from strongly agree to strongly disagree.

Psychometric Information:

Test-retest reliability ranges from .82 to .88. Cronbach's alpha ranges from .77 to .88 (Blascovich & Tomaka, 1993; Rosenberg, 1986). Alpha-reliability for the whole 10-item scale was .88 in a Norwegian sample of 250 youths (Ystgyeard, 1993). The four-item short version correlated .95 with the score based on the original 10-item scale, and the alpha reliability was estimated at .80 (Tambs, 2004).

Base References/Primary Citations:

Blascovich, J. & Tomaka, J. (1991). Measures of self-esteem. *Measures of personality and social psychological attitudes* 1:115-160.

Robinson, P.R. Shaver, and L.S. Wrightsman (eds.) (1991). *Measures of Personality and Social Psychological Attitudes (Third edition).* Ann Arbor: Institute of Social Research.

Rosenberg, M. (1986). *Conceiving the Self*. Krieger: Malabar, FL.

Rosenberg, M. (1965). *Society and the Adolescent Self-image.* New Jersey: Princeton University Press.

Tambs, K. (2004). Valg av spørsmål til kortversjoner av etablerte psykometriske instrumenter. Ed. I. Sandanger, G. Ingebrigtsen, J.F. Nygård and K. Sørgyeard. *Ubevisst sjeleliv og bevisst samfunnsliv. Psykisk hele i en sammenheng. Festskrift til Tom Sørensen på hans 60-års dag*, 217-229. Nittedal: Nordkyst Psykiatrisk AS.

Ystgyeard, M. (1993). *Sårbar ungdom og sosialt støtte. En tilnærming til forebygging av psykisk stress og selvmord.* Oslo: Senter for sosialt nettverk og helse.

3. **Rationale for choosing the questions:**
   The Rosenberg Self-Esteem Scale is one of the most widely used self-esteem measures in social science research.

4. **Revision during the data collection period:**
   The instrument was used in all versions of Q6 except for version 6A. No further revisions have been made.

Life Time History of Major Depression (LTH of MD)

1. Name of original Scale: Life Time History of Major Depression (LTH of MD)

	Have you ever experienced the following, since you became pregnant with this child, for a consecutive period of two weeks or more?	Response options Q1, Q-far, & Q6A	Response options Q6B, C, D
1	Felt depressed, sad	1-No 2-Yes	1- No 2- Yes, during pregnancy 3- Yes, during first year after birth 4- Yes, during the last 2 years
2	Had problems with appetite or eaten too much		
3	Been bothered by lack of energy		
4	Blamed yourself and felt worthless		
5	Had problems with concentration or had problems making decisions		
6	Had at least 3 of the problems named above simultaneously		

The 6 questions were used in all versions of Q1, Q6, and Q-far.

Section No. in different versions of the questionnaires

Q1	1A:140	1B:135	1C:135	1E:142
Q6	6A:51	6B:52	6C:52	6D:52
Q-far	farB:33	farD:67		

2. Description of original instrument: Life Time History of Major Depression (LTH of MD)

These items closely correspond to the DSM-III criteria for lifetime major depression. DSM criteria are met when *i)* three types of symptom items are endorsed, *ii)* one of these is the first, felt depressed, and *iii)* three types of symptoms occurred simultaneously. The criteria also include that the depression was not caused by some externally negative incident.

Psychometric Information:
The reliability of the scale was tested by a new examination a year later, now using the CIDI structured interview. The correspondence was rather modest (kappa =0 .34, tetrachoric r = 0.56) (Kendler, et al., 1993).

Base Reference/Primary Citation:
Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A.C. and Eaves, L.J. (1993). The lifetime history of major depression in women: reliability of diagnosis and heritability. *Archives of General Psychiatry 50*: 863-870.

Modifications
In Q1, the answers are coded as “yes” or “no”. In Q6, the “yes” category was split into three specific time periods (see table above).

3. Rationale for choosing the questions:
The questions aim to measure lifetime symptoms of depression. The measurement precision is not impressing, probably primarily because people tend to forget their problems earlier in life, but no alternative measure of life time depression was available.

4. Revision during the data collection period:
Some revisions on response options were made from Q1, Q-far, and Q6A to the other versions of Q6 (cf. table above).

Adverse Life Events

1. Name of original questions: Questions about mothers' adverse life events

	Have you experienced any of the following during the last 12 months? If yes, how painful or difficult was it for you?	Response options
1	Have you had problems at work or where you study?	See 'Modifications' below
2	Have you had financial problems?	
3	Have you been divorced, separated or ended the relationship with your partner?	
4	Have you had any problems or conflicts with your family, friends or neighbors?	
5	Have you been seriously worried that there is something wrong with the child?	
6	Have you been seriously ill or injured?	
7	Has anyone close to you been seriously ill or injured?	
8	Have you been involved in a serious traffic accident, house fire or robbery?	
9	Have you been the victim of maltreatment or abuse?	
10	Have you lost someone close to you?	
11	Other dramatic events/experiences you have had:	

The questions (formulated with minor difference from questionnaire to questionnaire) were used in all versions of Q3, Q4, Q5, Q6, Q-5year, and Q-far.

Section No. in different versions of the questionnaires

Q3	3A:116	3B:128	3C:128	3E:131	
Q4	4A:79	4B:90	4F:90	4G:91	4H:97
Q5	5A:92	5B:99	5C:99	5D:100	5E:103
Q6	6A:70	6B: 71	6C:71	6D:71	
Q-5year	5yearA:52	5yearB:55			
Q-far	farB: 37	farD: 73			

2. Description of original questions: Questions about adverse life events

These questions were selected primarily because of their relevance to the population in general, partly due to their relevance to women with small children. The questions are inspired by a list adopted from Coddington (1972), which was directed at children from preschool to senior high school. The questions in this section were adapted to adult respondents.

Psychometric Information:

No relevant psychometric information has been found.

Base Reference/Primary Citation:

Coddington, R.D. 1972. The significance of life events as etiologic factors in the diseases of children II: A study of a normal population. *Journal of Psychosomatic Research* 16: 205-213.

Modifications:

Questions 5&9 were not included in Q3.

The answering categories differ from questionnaire to questionnaire. In Q3, Q4, Q5, and Q6, mothers would first report whether or not they had experienced the problem, and if the answer was positive, they would continue to rate how painful or difficult it was on a 3-point scale (1=Not too bad, 3=Very painful/difficult).

In Q-5year, the answer categories are "no", "yes, during the last year", and "yes, 2-5 years ago".

In Q-far, the answer categories are only either "yes" or "no".

3. Rationale for choosing the questions:

The selected questions were chosen because they were believed to address life events that supposedly affect the mother and her family.

4. **Revision during the data collection period:**
   No revisions have been made.

Feelings Related to Childbirth

1. Name of original questions: Questions about the pregnant women's feelings related to childbirth

	Do you agree or disagree with the following statements relating to the forthcoming birth of your baby?	Response options
1	I want to give birth as naturally as possible without painkillers or intervention	1-Agree completely 2-Agree 3-Agree somewhat 4-Disagree somewhat 5-Disagree
2	I am really dreading giving birth	
3	I want to have enough medication so that the birth will be painless	
4	I want to have an epidural regardless	
5	I want to have an epidural if the midwife agrees	
6	If I could choose I would have a caesarean	
7	I think the woman herself should decide whether or not to have a caesarean	
8	I worry all the time that the baby will not be healthy or normal	
9	I am really looking forward to the baby coming	

The 9 items were used in all versions of Q3.

Section No. in different versions of the questionnaire

Q3	3A: 109	3B:121	3C:121	3E:124

2. Description of original questions: MoBa specific single questions

These questions were developed to survey pregnant women's feelings related to childbirth. Five response categories range from agree completely to disagree.

Psychometric Information:

No psychometric information has been found.

Base References/Primary Citations:

Not relevant.

3. Rationale for choosing the questions:

Feelings about childbirth, in particular prenatal anxiety, are associated with developmental outcome in infancy (e.g. Huizink, et al. 2002).

4. Revision during the data collection period:

No revisions have been made.

Added reference:

Huizink AC. de Medina PG. Mulder EJ. Visser GH. Buitelyear JK. 2002. Psychological measures of prenatal stress as predictors of infant temperament. *Journal of the American Academy of Child & Adolescent Psychiatry* 41(9):1078-85.

Differential Emotion Scale (DES): Enjoyment and Anger

1. Name of original scale: Differential Emotional Scale (DES), Enjoyment and Anger Subscales

	How often do you experience the following in your everyday life?	Response options
1	Feel glad about something	1-Rarely or never 2-Hardly ever 3-Sometimes 4-Often 5-Very often
2	Feel happy	
3	Feel joyful, like everything is going your way, everything is rosy	
4	Feel like screaming at somebody or banging on something	
5	Feel angry, irritated, annoyed	
6	Feel mad at somebody	

The 6-item DES subscales were used in all versions of Q5, Q6, and Q-far. They were also used in all versions of Q3 and Q4 except for version A.

Section No. in different versions of the questionnaires

Q3	3A: N/A	3B:124	3C:124	3E:127	
Q4	4A: N/A	4B:88	4F:88	4G:89	4H:95
Q5	5A:89	5B:96	5C:96	5D:97	5E:100
Q6	6B:72	6C:72	6D:72		
Q-far	farB:36	farD:78			

2. Description of original instrument: The Differential Emotional Scale (DES)

The Differential Emotional Scale (DES; Izard, *et al*., 1993) derives from Izard's (1971) differential emotions theory. The DES consists of a series of subscales that capture various emotions. It is formulated around a thirty/forty-two-item adjective checklist, with three adjectives of each of the emotions. The DES has been developed through cross-cultural research and is thus considered to be emotion-specific. The scale comes in four forms. The items in this section were selected from Enjoyment and Anger subscales from DES-IV, which consists of 12 discrete subscales (Interest, Enjoyment, Surprise, Sadness, Anger, Disgust, Contempt, Fear, Shame, Shyness, and Guilt, Hostility Inward). Each item is administered on a 5-point (rarely/never to very often) scale.

Psychometric Information:

Construct validity of the DES has been documented for the different versions, including DES-IV (see e.g. Blumber & Izard, 1985; Kotsch, *et al*.,1982). For DES-IV, Alpha coefficients range from .56 to .85 (mean = .74). Internal reliability is .83 for Enjoyment and .85 for Anger (Izard *et al*., 1993).

Base References/Primary Citations:

Izard,CE, Libero, DZ, Putnam, P, & Haynes,O. (1993). Stability of emotion experiences and their relations to traits of personality. *Journal of Personality and Social Psychology* 64(5): 847-860.

Blumberg, S. H., & Izard, C. E. 1985. Affective and cognitive characteristics of depression in 10- and 11-year-old children. *Journal of Personality and Social Psychology* 49*:*194-202.

Izard, C. E. (1971). *The Face of Emotion*. New York, NY: Appleton-Century-Crofts.

Kotsch, W.E., Gerbing, D.W., and Schwartz, L.E. (1982). The construct validity of the Differential Emotional Scale as adapted for children and adolescents. In C.E. Izard (Ed.),

Measuring emotions in infants and children (Vol. 1, pp. 251-278). Cambridge, England: Cambridge University Press.

3. **Rationale for choosing the questions:**
   Enjoyment and anger represent basic emotional tendencies, typically not covered in symptom scales of mental health problems. The enjoyment sub-scale captures positive affect, considered a component of subjective well-being, and the anger sub-scale measures activated negative emotions that are not covered by typical symptom scales of distress.

4. **Revision during the data collection period:**
   The items were not used in version A of Q3 and Q4. No further revisions have been made.

General Self-Efficacy Scale (GSE)

1. Name of original scale: The General Self-Efficacy scale (GSE)

	How well do these statements describe you?	Response options
1	I can always manage to solve difficult problems if I try hard enough	1-Not at all true 2-Hardly true 3-Moderately true 4-Exactly true
2	If someone opposes me, I can find the means and ways to get what I want	
3	I am confident that I could deal efficiently with unexpected events	
4	I can remain calm when facing difficulties because I can rely on my coping abilities	
5	If I am in trouble, I can think of a good solution	

The 5-item GSE short version was used in all versions of Q3 and Q5.

Section No. in different versions of the questionnaires

Q3	3A:113	3B:125	3C:125	3E:128	
Q5	5A:88	5B:95	5C:95	5D:96	5E:99

2. Description of original instrument: The General Self-Efficacy scale (GSE)

The General Self-Efficacy scale is a 10-item psychometric scale that is designed to assess optimistic self-beliefs to cope with a variety of difficult demands in life. The scale has been originally developed in German by Matthias Jerusalem and Ralf Schwarzer in 1979, and later revised and adapted to many other languages by various co-authors (e.g Schwarzer et al., 1997; Leganger, et al., 2000). A 5-item short version (Tambs & Røysamb, 2014) is used in MoBa. Responses were reported on a 4-point scale ranging from (1) = Not at all true, to (4) = Exactly true.

Psychometric Information:

In samples from 25 nations, Cronbach's alphas ranged from .75 to .91, with the majority in the high .80s. The scale is unidimensional (Scholz, et al., 2002). Criterion-related validity is documented in numerous correlation studies (Schwarzer & Born, 1997; Scholz, et al., 2002), where positive coefficients were found with favorable emotions, and negative coefficients were found with depression, anxiety, stress, burnout, and health complaints. The construct validity of GSE was also supported in a Norwegian study (Leganger, et al., 2000). The 5 items in the short version were chosen after regression analyses based on a sample of N>1500. The short version had alpha of .78, and correlated .96 with the full scale (multiple R^2=.92). Internal consistency of the short version based on the MoBa data was alpha=.83 (Ystrom, et al., 2008)

Base References/Primary Citations:

Tambs, K. & Røysamb E. 2014. Selection of questions to short-form versions of original psychometric instruments in MoBa. *Norwegian Journal of Epidemiology [Norsk Epidemiologi]* 24:195-201.

Leganger, A., Kraft, P. & Røysamb, E. 2000. Perceived self-efficacy in health behaviour research: conceptualisation, measurement and correlates. *Psychology and Health* 15: 51-69.

Scholz, U., Gutiérrez-Doña, B., Sud, S., & Schwarzer, R. 2002. Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment 18*(3): 242-251.

Schwarzer, R., & Born, A. 1997. Optimistic self-beliefs: Assessment of general perceived self-efficacy in thirteen cultures. *World Psychology 3*(1-2): 177-190.

Schwarzer, R., Born, A., Iwawaki, S., Lee, Y.-M., Saito, E., & Yue, X. 1997. The assessment of optimistic self-beliefs: Comparison of the Chinese, Indonesian, Japanese and Korean versions of the General Self-Efficacy Scale. *Psychologia: An International Journal of Psychology in the Orient 40* (1): 1-13.

Ystrom E, Niegel S, Klepp K-I, Vollrath ME. 2008. The impact of maternal negative affectivity and self-efficacy on breastfeeding: The Norwegian Mother and Child Cohort Study (MoBa). *The Journal of Paediatrics* 152(1):68-72.

3. **Rationale for choosing the questions:**
   Self-efficacy is considered to be an important determinant of behavioural change. The GSE has been used internationally with success for two decades, and is suitable for a broad range of applications.

4. **Revision during the data collection period:**
   No revisions have been made.

Edinburgh Postnatal Depression Scale (EPDS)

1. Name of original scale: Edinburgh Postnatal Depression Scale (EPDS)

	How often do you experience the following in your everyday life?	Response options
1	Have blamed yourself unnecessarily when things went wrong	1-Yes, most of the time 2-Yes, some of the time 3-Not very often 4-Yes, very often
2	Have been anxious or worried for no good reason	
3	Have felt scared or panicky for no very good reason	
4	Have been so unhappy that you have had difficulty sleeping	
5	Have felt sad or miserable	
6	Have been so unhappy that you have been crying	

The 6 questions were used in all versions of Q4.

Section No. in different versions of the questionnaires

Q4	4A:80	4B:91	4F:91	4G:92	4H:98

2. Description of original instrument: Edinburgh Postnatal Depression Scale (EPDS)

The Edinburgh Postnatal Depression Scale (EPDS) has been developed at health centres in Livingston and Edinburgh, to assist primary care health professionals to detect mothers suffering from postnatal depression (Cox, et al., 1987). It consists of 10 short statements. The mother checks which of the four possible responses (1-Yes, most of the time, 2-Yes, some of the time, 3-Not very often, 4-Yes, very often) is closest to how she has been feeling recently. Eberhard-Gran (2007) showed that five of the ten EPDS items could be used as a reliable and valid short-form EPDS-5, and this was decided to be used in MoBa. Unfortunately by a misunderstanding one item from EPDS-5 "I have looked forward with enjoyment to things'' was replaced by two other EPDS items, number three and six on the list above.

Psychometric Information:

The EPDS has satisfactory validity, split-half reliability and has been demonstrated to be sensitive to changes in the severity of depression over time. The sensitivity of the EPDS has been estimated at 86% and the specificity at 78% (Cox, et al., 1987). The EPDS-5 was developed and validated in a Norwegian population based sample of pregnant women (Eberhard-Gran, et al., 2001) and to correlate 0.96 with the original EPDS and 0.75 with the SCL-25. The same study estimated the sensitivity and specificity of the EPDS-5 100% and 70%, respectively, for clinically diagnosed major depression, using a ≥5 cut-off score. The sum of the 6 MoBa selected items correlated at r=.961 with the full version, and at r=.963 with the 5-item short version developed by Eberhard-Gran, et al. (2007). Cronbach's alpha for the 6-item short version in MoBa was estimated at .84.

Base References/Primary Citations:

Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786.

Eberhard-Gran M, Eskild A, Tambs K, Schei B, Opjordsmoen S. 2001. The Edinburgh Postnatal Depression Scale: Validation in a Norwegian community sample. *Nordic Journal of Psychiatry* 55:113–117.

Eberhard-Gran M, Eskild A, Samuelsen SO, Tambs K. 2007. A short matrix version of the Edinburgh Depression Scale. *Acta Psychiatrica Scandnavica* 116: 195-200.

3. **Rationale for choosing the questions:**
   The Edinburgh Postnatal Depression Scale is a valuable and efficient way of identifying patients at risk for 'perinatal' depression. It has been proven to be an effective screening tool (Cox, et al., 1987).

4. **Revision during the data collection period:**
   No revisions have been made.

Adult ADHD Self-Report Scale (ASRS)

1. Name of original scale: Adult ADHD Self-Report Scale (ASRS Screener)

	Feeling of agitation and restlessness. (Enter a cross in a box for the items that apply to you best during the last 6 months.)	Response options
1	How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?	1-Never 2-Rarely 3-Sometimes 4-Often 5-Very often
2	How often do you have difficulty getting things in order when you have to do a task that requires organisation?	
3	When you have a task that requires a lot of thought, how often do you avoid or delay getting started?	
4	How often do you have problems remembering appointments or obligations?	
5	How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?	
6	How often do you feel overly active and compelled to do things, like you were driven by a motor?	

The 6 questions from the ASRS screener were used in all versions of Q6 and version D of Q-far.

Section No. in different versions of the questionnaires

Q6	6A:67	6B:68	6C:68	6D:68
Q-far	farB: N/A	farD:72		

2. Description of original instrument: Adult ADHD Self-Report Scale (ASRS Screener)

Adult ADHD Self-Report Scale (ASRS; Kessler et al.,2005) is a self-report screening scale of adult attention deficit/hyperactivity disorder (ADHD). This scale was originally developed in conjunction with revision of the WHO Composite International Diagnostic Interview (CIDI) and includes 18 questions concerning the frequency of recent DSM-IV Criterion A - symptoms of adult ADHD. A short form of the ASRS (ASRS screener), consisting of six questions, was developed by Kessler et al. (2007). Four questions (1-4) capture symptoms of inattention and two questions (5 & 6) entail symptoms of hyperactivity - impulsivity. The response options are "never", "rarely", "sometimes", "often", and "very often".

Psychometric Information:

Due to the wide variation in symptom-level concordance, the unweighted six-question ASRS screener outperformed the unweighted 18-question ASRS in sensitivity (68.7% v. 56.3%), specificity (99.5% v. 98.3%), total classification accuracy (97.9% *vs*. 96.2%), _ (0.76 *vs*. 0·58), and OR (414.1 vs. 73.4) (Kessler et al., 2005). The internal consistency reliability of the continuous ASRS Screener was between .63-.72, while the test-retest reliability (Pearson's correlations) was in the range of .58-.77. Furthermore, it seems like ASRS Screener measures the core aspects of adult ADHD, since the four-category version of ASRS Screener had strong concordance with clinical diagnoses with an AUC of .90 (Kessler et al., 2007).

Base References/Primary Citations:

Kessler R.C., Adler L., Ames M., Demler O., Faraone S., Hiripi E., Howes M. J., Jin R., Secnik, K., Spencer T., Ustun T.B. and Walters E.E. (2005). The World Health Organization adult ADHD self-report scale (ASRS): a short screening scale for use in the general population. *Psychological Medicine* 35(2):245-256.

Kessler R.C., Adler L., Gruber M.J., Sarawate C.A., Spencer T. and Van Brunt D.L. (2007). Validity of the World Health Organization Adult Self-Report Scale (ASRS) Screener in a representative sample of health plan members. *International Journal of Methods in Psychiatric Research* 16(2): 52-65.

3. **Rationale for choosing the questions:**
   The self-administrating nature of the ASRS Screener and the small number of questions makes it a suitable instrument for screening in large population-based questionnaires and epidemiological studies (Kessler et al., 2005).

4. **Revision during the data collection period:**
   The questions were only used in version D of Q-far. No further revisions have been made.

Autonomic Nervous System Questionnaire (ANS)

1. Name of original scale: The Autonomic Nervous System Questionnaire (ANS)

	In the past 6 months have you experienced the following?	Response options
1	A spell or attack when all of sudden you felt frightened, anxious or very uneasy?	1-Yes 2-No
2	A spell or attack when for no reason your heart suddenly began to race, you felt faint, or you couldn't catch your breath?	
3	If you have had such attacks, did they ever happen in a situation where you were not in danger or not the center of attention?	

The 3 questions were used in all versions of Q-8year.

Section No. in different versions of the questionnaires

Q-8year	8yearA:51	8yearB:51	8yearC:51

2. Description of original instrument: The Autonomic Nervous System Questionnaire (ANS)

The Autonomic Nervous System Questionnaire (ANS; Stein, et al., 1999) is a self-report short instrument developed to screen for panic disorder. There are three versions of the ANS, with two, three and five items. The three item version is included in MoBa. Two "gating" questions ask about the occurrence of anxiety attacks or unexplained paroxysms of physical symptoms (tachycardia, dizziness or shortness of breath) in the prior 6 months. The last item has as purpose to exclude scoring panic in situations where anxiety may have a natural cause. All the items are administered in a yes/no response format. Panic is scored when all questions are answered with a "yes".

Psychometric Information:

According to the developer, the screening capacity for the three item version is almost as good as for the five item version, with sensitivity ranging from .78 to .88 in three different samples and specificity ranging from .43 to .70 (Stein, et al., 1999). The sensitivity was estimated at .88 and specificity at .77 in a Finnish primary care study (Tilli, et al., 2013).

Base References/Primary Citations:

Stein, M.B., Roy-Byearne, P.P., McQuaid, J. R., Laffaye, C., Russo, J., McCahill, M.E et al. 1999. Development of a brief diagnostic screen for panic disorder in primary care. *Psychosomatic Medicine* 61: 359–364.

Tilli, V. Suominen, K. & Karlsson, H. 2013. The autonomic Nervous System Questionnaire and the Brief Patient Health Questionnaire as screening instruments for panic disorder in Finnish primary care. *European Psychiatry* 28 (7): 442-447.

3. Rationale for choosing the questions:

The ANS is a space efficient screening tool for panic disorders which is quickly and easily completed.

4. Revision during the data collection period:

No revisions have been made.

Mini Social Phobia Inventory (miniSPIN)

1. Name of original scale: Mini Social Phobia Inventory (miniSPIN)

	How much have the following problems bothered you during the past week?	Response options
1	Fear of embarrassment cause me to avoid doing things or speaking to people	1-Not at all 2-A little bit 3-Somewhat 4-Very much 5-Extremely
2	I avoid activities in which I am the centre of attention	
3	Being embarrassed or looking stupid are among my worst fears	

The 3 questions were used in all versions of Q-8year.

Section No. in different versions of the questionnaires

Q-8year	8yearA:49	8yearB:49	8yearC:49

2. Description of original instrument: Mini Social Phobia Inventory (miniSPIN)

The Mini-SPIN (Connor, et al., 2001) is 3-item self-rated scale derived from the Social Phobia Inventory (SPIN; Connor, et al., 2000). The questions are constructed to measure the level of fear, embarrassment and avoidance in the context of social situations. Each item is evaluated on a 5-point Likert scale (1-5 points for replies from "not at all" to "extremely").

Psychometric Information:

With a cutoff of 6 or more points, its sensitivity and specificity reaches 88.7% and 90.0% respectively (Connor et al. 2001). The miniSPIN showed good test-retest reliability, $r = .70$. and excellent internal consistency, $\alpha = .91$ (Seeley-Wait, et al., 2009). The miniSPIN also demonstrated adequate concurrent, convergent and divergent validity, and satisfactory discriminative validity in a Swedish sample (Ek & Ostlund, 2013).

Base Reference/Primary Citation:

Connor, K.M., Davidson, J.R.T, Churchill, L.E., Sherwood, A., E., Foa, E. & Weisler, R.H. 2000. Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *British Journal of Psychiatry* 176: 379–386.

Connor K.M., Kobak K.A., Churchill L.E., Katzelnick D., & Davidson J.R. 2001. Mini-SPIN: a brief screening assessment for generalized social anxiety disorder. *Depression and Anxiety* 14:137-140.

Ek, A. & Ostland, P. 2013. Internet validation and psychometric evaluation of the Mini Social Phobia Inventory applied to one clinical and two nonclinical samples. Retrieved on 25.04.2014 from http://www.diva-portal.org/smash/get/diva2:632130/FULLTEXT01.pdf.

Seeley-Wait E., Abbott M.J., & Rapee R.M. 2009. Psychometric properties of the Mini-Social Phobia Inventory. *Primary Care Companion to the Journal of Clinical Psychiatry* 11: 231-236.

3. Rationale for choosing the questions:

Mini-SPIN is a compact screening instrument for social anxiety disorder.

4. Revision during the data collection period:

No revisions have been made.

International Personality Item Pool (IPIP) Big-Five factor markers

1. Name of original scale: The International Personality Item Pool (IPIP) Big-Five factor markers

	Describe yourself the way you usually are:	Response options
1	Am the life of the party	
2	Feel little concern for others	
3	Am always prepared	
4	Get stressed out easily	
5	Have a rich vocabulary	
6	Don't talk a lot	
7	Am interested in other people	
8	Leave my belongs around	
9	Am relaxed most of the time	
10	Have difficulty understanding abstract ideas	
11	Feel comfortable around people	
12	Insult people	
13	Pay attention to details	
14	Worry about things	
15	Have a vivid imagination	
16	Keep in the background	
17	Sympathize with others' feelings	
18	Make a mess of things	
19	Seldom feel blue	
20	Am not interested in abstract ideas	
21	Start conversations	1-Strongly disagree
22	Am not interested in other people's problems	
23	Get chores done right away	2-Disagree somewhat
24	Am easily disturbed	
25	Have excellent ideas	3-Neither nor
26	Have little to say	
27	Have a soft heart	4-Agree somewhat
28	Often forget to put things back in their proper place	
29	Get upset easily	5-Strongly agree
30	Do not have good imagination	
31	Talk to a lot of different people at parties	
32	Am not really interested in others	
33	Like order	
34	Change my mood a lot	
35	Am quick to understand things	
36	Do not like to draw attention to myself	
37	Take time out for others	
38	Shirk my duties	
39	Have frequent mood swings	
40	Use difficult words	
41	Don't mind being the centre of attention	
42	Feel others' emotions	
43	Follow a schedule	
44	Get irritated easily	
45	Spend time reflecting on things	
46	Am quiet around strangers	
47	Make people feel at ease	
48	Am exacting in my work	
49	Often feel blue	
50	Am full of ideas	

The instrument was used in version B of Q-5year and version D of Q-far.

Section No. in different versions of the questionnaires

Q-5year	5yearA: N/A	5yearB:57
Q-far	farB: N/A	farD:70

2. **Description of original instrument: The International Personality Item Pool (IPIP) Big-Five factor markers**

The IPIP Big-Five factor markers (Goldberg, 2001) consist of a 50 or 100-item inventory. The MoBa makes use of the 50-item version consisting of 10 items for each of the Big-Five personality factors: Extraversion, Agreeableness, Conscientiousness, Emotional Stability (Neuroticism) and Intellect. Participants were requested to rate how well the 50 items described them on a 5-point scale (strongly disagree to strongly agree).

Psychometric Information:

Internal consistencies for the factors are: Extraversion .90, Agreeableness .85, Conscientiousness .79, Emotional Stability .89, Intellect .79. Conscientiousness, Extraversion and Emotional Stability scales of the IPIP Big-Five factor markers were highly correlated with those of the NEO-FFI ($r=.69$ to $-.83$, $p<.01$). Agreeableness and Intellect scales correlated less strongly ($r=.49$ and .59 respectively, $p<.01$) (Gow, et al., 2005). The IPIP Big-Five factor markers have also been validated in a Croatian sample (Mlacic & Goldberg, 2007).

Base References/Primary Citations:

Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. J. Deary, F. De Fruyt, and F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg, The Netherlands: Tilburg University Press.

Gow, AJ, Whiteman, MC, Pattie, A & Deary, IJ (2005). Goldberg's 'IPIP' Big-Five factor markers: Internal consistency and concurrent validation in Scotland. *Personality and individual differences* 39 (2): 317-329.

Mlacic, B., & Goldberg, L. R. (2007). An analysis of a cross-cultural personality inventory: The IPIP Big-Five factor markers in Croatia. *Journal of Personality Assessment* 88: 168-177.

Røysamb, E., Vittersø, J. & Tambs, K. (2014). The Relationship Satisfaction scale: Psychometric properties. *Norwegian Journal of Epidemiology* [Norsk Epidemiologi] 24(1-2): 187-194.

3. **Rationale for choosing the questions:**

The IPIP Big-Five factor markers are frequently used in personality research.

4. **Revision during the data collection period:**

The instrument was only used in version B of Q-5year and version D of Q-far.

Social Support

1. Name of original questions: 3 questions about social relations and social support

1	**Do you have anyone other than your husband/partner you can ask for advice in a difficult situation?**	**Response options**
		1- No 2-Yes, 1 or 2 people 3-Yes, more than 2 people
2	**How often do you meet or talk on the telephone with your family (other than your husband/partner and children) or close friends?**	**Response options**
		1) Once a month or less 2) 2-8 times a month 3) More than twice a week
3	**Do you often feel lonely?**	**Response options**
		1-Almost never 2-Infrequently 3-Sometimes 4-Usually 5-Almost always

The instrument was used in all versions of Q1, Q3, Q5, and Q6. It was also used in versions B &C of Q-8year, and version D of Q-far.

Section No. in different versions of the questionnaires

Q1	1A:133-135	1B:128-130	1C:128-130	1E:135-137	
Q3	3A:106-108	3B:117-119	3C:117-119	3E:120-122	
Q5	5A:85-87	5B:92-94	5C:92-94	5D:93-95	5E:96-98
Q6	6A:46-48	6B:47-49	6C:47-49	6D:47-49	
Q-8year	8yearA: N/A	8yearB:53-54	8yearC:53-54		
Q-far	farB: N/A	farD:75-77			

2. Description of original questions: MoBa specific questions

Psychometric Information:
Not relevant

Primary citation/ base reference:
Not relevant

3. Rationale for choosing the questions:
Social support and social relations are related to personal health and happiness (see Reblin & Uchino, 2008 for a review).

4. Revision during the data collection period:
In father questionnaire, the word 'husband' in the first 2 items has been replaced with 'wife'. The last item 'Do you often feel lonely?' is not included in Q-8year. No further revisions have been made.

Added reference:

Reblin, MA & Uchino BN. 2008. Social and emotional support and its implication for health. *Current Opinion in Psychiatry* 21(2): 201–205.

Parental Locus of Control

1. Name of original scale: Parental Locus of Control (PLOC)

	Bringing up your child *(Enter a cross to indicate whether you agree or disagree with the following statements.)*	**Response options**
1	What I do has little effect on my child's behaviour	1-Totally disagree 2-Partially disagree 3-Neither/nor 4-Partially agree 5-Totally agree
2	My child is used to getting what he/she wants in any case, so there's no point in even trying to refuse him/her	
3	Cuddles and hugs are an important way of showing my child that I love him/her	
4	If my child and I have a disagreement it is usually easy to divert him/her	
5	My life is chiefly controlled by my child	
6	I think it is very important for my child to learn to deal with the fact he/she cannot get their own way on everything	
7	It is often easier to let my child have his/her own way than to put up with a tantrum	
8	Sometimes when I'm tired I let my child get to do things that I usually would not have allowed otherwise	
9	It isn't so important what strategies you use to bring up your children; if you love your children they will develop well	

The 9 questions were used in all versions of Q6 except for version A.

Section No. in different versions of the questionnaire

Q6	6A:N/A	6B:75	6C:75	6D:75

2. Description of original instrument: Parental Locus of Control (PLOC)

The purpose of the PLOC is to measure parental locus of control. The instrument measures five factors: parental efficacy, parental responsibility, child control of parents' life, parents' belief in fate/chance and parental control of child's behavior. Five of the questions (items 1, 2, 5, 7, 8) are derived from the PLOC, representing the factors parental efficacy (2 questions), child control of parents' life (1 question) and parental control of child's behavior (2 questions). The additional four items are derived from a short scale on positive upbringing developed for the MoBa purpose by Lie and Schjølberg (2005). All nine questions use a 5-point Likert scale from "totally disagree" (1) to "totally agree" (5).

Psychometric Information:

Cronbach alpha reliability coefficients for the five factors have been estimated to be .75, .77, .67, .75 and .65, respectively, while the reliability coefficient for the whole scale was estimated to be .92. The PLOC also showed good construct and discriminant validity (Campis, et al., 1986). The reliability for the nine items consisting of five PLOC items four other questions is .49, estimated from the MoBa data material.

Base References/Primary Citations:

Campis, L.K., Lyman, R.D., & Prenticedunn S. 1986. The parental locus of control scale – development and validation. *Journal of clinical child psychology* 15: 260-267.

Lie, K.K. & Schjølberg, S. 2005. Short scale on positive upbringing (unpublished; personal communication).

3. Rationale for choosing the questions:

Both the questions from PLOC and the questions developed specifically for the MoBa study were included as a measure of parental locus of control in the parental practices.

4. Revision during the data collection period:

The 9 items were used in all versions of Q6 except for version A.

Eating Disorders

1. Name of original questions: Questions on eating disorders and behaviours

Questions on eating disorders from Q1

1	**Do you think you were overweight before this pregnancy?**	**Response options**
		1-Yes, a lot 2-Yes, a little 3-No
2	**Are you worried about putting on more weight than necessary during this pregnancy?**	
		1-Yes, very worried 2-Somewhat worried 3-No, not especially worried
3	**Has anyone said that you were too thin while you felt that you were too fat during the last 2 years?**	
		1-Yes, often 2-Yes, occasionally 3-No
4	**Have you ever lost control while eating and not been able to stop before you have eaten far too much?**	
	Last 6 months before this pregnancy Now	1-No 2-Infrequently 3-Yes, at least once a week
5	**Have you ever used any of the following to control your weight last 6 months before this pregnancy or now?**	
	Vomiting	1-At least once a week 2-Seldom 3-Never
	Laxatives	
	Fasting	
	Hard physical exercise	
6	**Is it important for your self-image that you maintain a certain weight?**	
		1-Yes, very important 2-Yes, quite important 3-No, not especially important

Questions on eating disorders from Q5 & Q6

	Have you during the last 18 months:	**Response options**
1	Thought yourself that you were too fat?	1-No 2-Yes
2	Been really afraid of putting on weight or becoming too fat?	
3	Heard others say that you were too thin, while you yourself thought that you were too fat?	
4	Thought that it was extremely important for your self-image to maintain a particular weight?	
	Have you at some time during the last 18 months or previously in your life - for a period lasting at least 3 months – experienced any of the following situations, and if so, how frequently was this?	
1	You lost control while eating, and could not stop before you had eaten far too much?	1) At least twice a week 2) 1-4 times a month 3) Seldom/never
2	Used vomiting to control your weight?	
3	Used laxatives to control your weight?	
4	Used fasting to control your weight?	
5	Used hard physical exercise to control you weight?	
	Have you at some time during the last 18 months gone at least three months without a period in connection with a time when you have been having eating problems?	
		1-No 2-Yes

Questions on eating disorders from Q-8year

1	**Have you ever had a period of time where you weighed much less than others thought you should?**	**Response options**
	If yes, describe_____	1-No 2-Yes I was_____years old, weighed _____kg, and was ____cm high
	If you answered yes to the previous question……	
	During the time, did you feel fat?	1-Not at all 2-A little 3-Very much
	During the time, were you afraid that you might gain weight or become fat?	
	When was the last time you weighed so little, and yet felt fat and were afraid about gaining weight?	_____years old
	Is this still the case?	1-No 2-Yes
2	**During the last year, have you ever had eating binges when you ate what most people would regard as an unusually large amount of food in a short period of time?**	
Version A&C		1-No 2-Yes
Version B		1- Yes, at least once a week 2-Yes, but seldom 3- No
Version C	In the period when you had the most number of eating binges, how many times did this happen in the course of one month?	Number 0-99
All versions	If you answered yes, did you feel that your eating was out of control?	1-No 2-Yes, somewhat out of control 3-Yes, absolutely out of control
All versions	How upset or distressed did binge eating usually make you feel?	1-Not at all 2-Somewhat 3-Very much
3	**During the last year, have you used any of the following methods to control your shape or weight?**	
	Make yourself vomit	1-Never 2-Sometimes 3-Weekly 4-Several times per week
	Use laxatives or diuretic pills	
	Fast or not eat for 24 hours or more	
	Use diet pills	
	Exercise more than two hours per day	
4	**In general, how important is shape and weight for your self-esteem?**	
		1-Not important at all 2- 2 3-3 4-4 5-The most important thing

The questions on eating disorders (formulated a little differently from questionnaire to questionnaire, see the tables above) were used in all versions of Q1, Q6 and Q-8year. The questions were also used in all versions of Q5 except for version A.

Section No. in different versions of the questionnaires

Q1	1A:143-148	1B:117-122	1C: 117-122	1E: 117-122	
Q5	5A:N/A	5B: 68-70	5C: 68-70	5D: 69-71	5E: 69-71
Q6	6A:63-65	6B:64-66	6C:64-66	6D: 64-66	
Q-8year	8yearA: 42-45	8yearB: 42-45	8yearC: 42-45		

2. Description of original questions: Questions on eating disorders and behaviors

The questions were designed in accordance with the DSM-IV (APA, 1994) diagnoses of Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorders Not Otherwise Specified (EDNOS).

Psychometric Information:

Similar diagnostic questions have been used in previous epidemiological studies in Norway (e.g. Reichborn-kjennerud, et al., 2003). Still, the questions are based on self-report and are intended to target more broadly defined disorders than diagnostic interviews (Bulik et al., 2007).

Base References/Primary Citations:

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders (*4th edition). Washington, DC: American Psychiatric Association.

Bulik C.M., Von Holle A., Hamer R., Berg C.K., Torgersen L., Stoltenberg C., Siega-Riz A.M., Sullivan P., and Reichborn-Kjennerud T. (2007). Patterns of remission, continuation, and of broadly defined eating disorders in the Norwegian Mother and Child Cohort Study (MoBa). *Psychological Medicine* 10: 1-10.

Reichborn-Kjennerud T, Bulik CM, Kendler KS, Røysamb E, Maes H, Tambs K, Harris JR. 2003. Gender differences in binge-eating: a population-based twin study. *Acta Psychiatrica Scandnavica* 108(3):196-202.

Modifications:

The questions were formulated a little differently from questionnaire to questionnaire. So are the answering categories (see the tables above). The Q1 focuses on the period before and during the pregnancy, while Q5 primarily focuses on the six-month period after birth. The answering categories are somewhat more differentiated in Q1 and Q6, while Q6 includes several questions.

3. Rationale for choosing the questions:

These questions are intended to bring about algorithms that define some specific subtypes of eating disorders (Bulik et al., 2007).

4. Revision during the data collection period:

Some revisions in Q-8year (see table above); the questions were used in all versions of Q5 except for version A.

World Health Organization's Quality Of Life Instrument-Short version (WHOQOL-BREF)

1. **Name of original scale:** World Health Organization's Quality of Life instrument-short version (the WHOQOL-BREF)

Q		Response options
1	**How would you rate your quality of life?**	
		1-Very poor 2-Poor 3-Neither poor nor good 4-Good 5-Very good
2	**How satisfied are you with your health?**	
		1-Very dissatisfied 2-Dissatisfied 3-Neither satisfied nor dissatisfied 4-Satisfied 5-Very satisfied
	The following questions ask about how much you have experienced certain things in the last two weeks.	
3	To what extent do you feel that (physical) pain prevents you from doing what you need to do?	1-Not at all 2-A little 3-A moderate amount 4-Very much 5-Totally/extremely
4	How much do you need medical treatment to be able to function in your daily life?	
5	How much do you enjoy life?	
6	To what extent do you feel your life to be meaningful?	
7	How well are you able to concentrate?	
8	How safe do you feel in your daily life?	
9	How healthy is your physical environment?	
	The following questions ask about how completely you experience or were able to do certain things in the last two weeks.	
10	Do you have enough energy for everyday life?	1-Not at all 2-A little 3-Moderately 4-Mostly 5-Completely
11	Are you able to accept your bodily appearance?	
12	Have you enough money to meet your needs?	
13	How available to you is the information that you need in your day-to-day life?	
14	To what extent do you have the opportunity for leisure activities?	
15	**How well are you able to get around?**	
		1-Very badly 2-Badly 3-Neither well nor bad 4-Well 5-Very well
	The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last two weeks.	
16	How satisfied are you with your sleep?	1-Very dissatisfied 2-Dissatisfied 3-Neither satisfied nor dissatisfied 4-Satisfied 5-Very satisfied
17	How satisfied are you with your ability to perform your daily living activities?	
18	How satisfied are you with your capacity for work?	
19	How satisfied are you with yourself?	
20	How satisfied are you with your personal relationships?	
21	How satisfied are you with your sex life?	
22	How satisfied are you with the support you get from your friends?	
23	How satisfied are you with the conditions of your living place?	
24	How satisfied are you with your access to health services?	
25	How satisfied are you with your transport?	
26	**How often do you have negative feelings, such as blue mood, despair, anxiety, depression?**	
		1-Never 2-Seldom 3-Quite often 4-Very often 5-Always

The questions were used in all versions of Q5.

Section No. in different versions of the questionnaire

Q5	5A: 93-99	5B:100-106	5C: 100-106	5D:101-107	5E:104-110

2. Description of original Instrument: The World Health Organization's Quality of Life Instrument-short version (WHOQOL-BREF)

The WHOQOL-BREF (cf. The WHOQOL Group, 1998) is an abbreviated 26 item version of the WHOQOL-100, which was developed by World Health Organization (WHO), with the aid of 15 collaborating centres around the world. The WHOQOL-BREF is a self-administered scale that covers four domains of quality of life: psychological, physical health, social relationships and environmental. It also includes one facet on overall quality of life and general health. All items are rated on a five-point scale (1-5). The WHOQOL-BREF is now available in over 20 different languages.

Psychometric Information:

The Cronbach's alpha for each of its domain were: physical health .82, psychological .81, social relationship .68, environmental .80 (Skevington, et al., 2004). The WHOQOL-BREF has the ability to discriminate between sick and well respondents (Skevington, 2004), and between outpatients on the basis of their level of depression (Berlim, et al., 2005). It was also sensitive to improvement after treatment with antidepressants (Berlim, et al., 2005).

Base References/Primary Citations:

Berlim MT, Pavanello DP, Caldieraro MAK, Fleck MP. (2005). Reliability and validity of the WHOQOL BREF in a sample of Brazilian outpatients with major depression. *Quality of Life Research* 14(2): 561-564.

Development of the World Health Organization WHOQOL-BREF quality of life assessment. The WHOQOL Group. (1998) *Psychological Medicine* 28(3): 551-558.

Skevington SM, Lotfy M, O'Connel KA, WHOQOL Group. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial: A report from the WHOQOL group. *Quality of Life Research* 13(2): 299-310.

3. Rationale for choosing the questions:

The WHOQOL-BREF is a sound, cross-culturally valid assessment of quality of life (Skevington, et al., 2004).

4. Revision during the data collection period:

No revisions have been made.

Alcohol Use Disorders Identification Test (AUDIT)

1. Name of original scale: Alcohol Use Disorders Identification Test (AUDIT)

1	How often do you drink alcohol now?	Response options
		1-About 6-7 times per week 2-About 4-5 times per week 3-About 2-3 times per week 4-About once per week 5-About 1-3 times per month 6-Less than once a month 7-Never
2	**How many alcohol units do you have on a typical day when you are drinking?**	**Response options**
		1) 10 or more 2) 7-9 3) 5-6 4) 3-4 5) 1-2 6) Less than 1
3	**How often during the last year…**	**Response options**
	1. …have you had 6 or more drinks on one occasion?	1-Never 2-Almost never 3-Sometimes 4-Often 5-Always
	2. …have you found that you were not able to stop drinking once you had started?	
	3. …have you failed to do what was normally expected from you because of drinking?	
	4. …have you needed a first drink in the morning to get yourself going after a heavy drinking session?	
	5. …have you had a feeling of guilt or remorse after drinking alcohol?	
	6. …have you been unable to remember what happened the night before because you had been drinking alcohol?	
	7. Have you or someone else been injured as a result of your drinking?	1-No 2-Yes, but not in the last year 3-Yes, during the last year
	8. Has a relative, friend or doctor (or other health worker) been concerned about your drinking or suggested that you cut down?	

The 10 questions were used in all versions of Q-8year.

Section No. in different versions of the questionnaires

Q-8year	8yearA:58-60	8yearB: 58-60	8yearC: 58-60

2. Description of original instrument: **Alcohol Use Disorders Identification Test (AUDIT)**

The Alcohol Use Disorders Identification Test (AUDIT; Saunders, et al., 1993) has been developed from a six-country WHO collaborative project as a screening instrument for hazardous and harmful alcohol consumption. It is a 10-item questionnaire which covers the domains of alcohol consumption, drinking behaviour, and alcohol-related problems.

Psychometric Information:

The average reliability across the AUDIT scales is .65. Using the lower cut-off point of 8, the overall sensitivity for hazardous and harmful alcohol use was 87% to 96%, with an overall value of 94%. The corresponding specificity was 81% to 98%, with an overall value of 94%. When the cut-off point of 10 was taken, the overall value of sensitivity was 80%, and the corresponding specificity was 98%. The AUDIT also has the ability to discriminate between alcoholics and non-drinkers (Saunders, et al., 1993).

Base References/Primary Citations:

Saunders JB, Aasland OG, Babor TF, DE La Fuente JR, and Grant M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-II. *Addiction* 88: 791-804.

Modifications:

The response categories for the question 'How often do you drink alcohol now?' have been altered. The original response categories are: four or more times a week, two to three times a week, two to four times a month, monthly or less, never.

The second question was rephrased as 'How many alcohol units do you have on a typical day when you are drinking?'; the original questions is 'How many drinks containing alcohol do you have on a typical day when you are drinking?'

3. **Rationale for choosing the questions:**

   The AUDIT provides a simple method of early detection of hazardous and harmful alcohol use in primary health care settings and is the first instrument of its type to be derived on the basis of a cross-national study.

4. **Revision during the data collection period:**

   No revisions have been made.

Rutgers Alcohol Problems Index (RAPI)

1. Name of original scale: Selective items from Rutgers Alcohol Problems Index (RAPI)

	Have you ever experienced any of the following problems during the last year in relation to your alcohol consumption?	Response options
1	Had argument or bad feelings with a family member	1-Never 2-Once 3-Several times
2	Suddenly found yourself in a place that you could not remember getting to	
3	Been absent from work or school	
4	Fainted or passed out suddenly	
5	Had a bad time	

The 5 questions were used in all versions of Q1.

Section No. in different versions of the questionnaires

Q1	1A:N/A	1B:116	1C:116	1E:116

2. Description of original scale: Rutgers Alcohol Problems Index (RAPI)

The original RAPI (White & Labouvie, 1989) is a 23-item self-administered screening tool for assessing adolescent problem drinking. It was developed in order to create a conceptually sound, unidimensional, relatively brief, and easily administered instrument to assess problem drinking in adolescence. The response categories are designed to reflect frequency of occurrence (1=Never, 3=Several times). Only 5 of the 23 items are selected into use in the MoBa.

Psychometric Information:

Factor analyses were conducted of test-retest data involving frequencies of a total of 53 symptoms and/or consequences of alcohol use as reported by a nonclinical sample of 1308 males and females aged 12 to 18 years at the initial test and 15 to 21 years at the retest. The resulting 23-item scale has a reliability of .92 and a 3-year stability coefficient of .40 for the total sample.

Base References/Primary Citations:

White, H.R. & Labouvie, E.W. (1989). Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol* 50:30-37.

3. Rationale for choosing the questions:

The advantages of this short, self-administered screening tool lie in its ease of administration and its standardization which makes it possible to compare problem drinking scores across groups.

4. Revision during the data collection period:

This section is not included in version A of Q1. No further revisions have been made.

Child development and behaviour

Ages and Stages Questionnaires (ASQ)

1. Name of original scale: Ages and Stages Questionnaires (ASQ)

Questions from ASQ in Q4

	The following questions concern your child's development. If you haven't actually observed your child, spend a little time looking at what he/she can actually do.	**Response options**
1	When your child is lying on his/her back, does he/she play by grabbing hold of his/her feet?	1-Yes, often 2-Yes, but seldom 3-No, not yet 4-Don't know
2	When your child is on his/her tummy, does he/she straighten both arms and push her whole chest off the bed or floor?	
3	Does your child roll over from his/her back onto his/her tummy?	
4	When you "chat" to your child, does he/she try to "chat" back to you?	
5	Does your child babble and make sounds when he/she is lying on his/her own?	
6	Can you tell how your child is just by listening to the sounds he/she is making *(e.g. contented, hungry, angry, in pain)?*	
7	Do you get a smile from your child when you just smile at him/her *(without touching or tickling him/her and without holding up a toy)?*	
8	When you call your child, does he/she turn towards you one of the first times you say his/her name?	
9	Does your child grab a toy you offer and then put it in his/her mouth or hold it?	
10	When your child is sitting on your lap, does he/she stretch out for a toy or something else on the table in front of you?	
11	Does your child hold onto a toy with both hands when he/she is examining it?	

Questions from ASQ in Q5

	The questions that follow are about your child's development at around the age of 18 months.	**Response options**
1	When you ask him/her, does your child go into another room to find a familiar toy or object? (You might ask, "Where is your ball?", or say, "Bring me your coat" or "Go get your blanket").	1-Yes 2-Sometimes 3-Not yet
2	Does your child say eight or more words in addition to "mama" and "dada"?	
3	Without showing him/her first, does your child point to the correct picture when you say, "Show me the kitty" or ask, "Where is the dog"?	
4	Does your child move around by walking, rather than by crawling on his/her hands and knees?	
5	Can your child walk well and seldom fall?	
6	Does your child walk down stairs if you hold onto one of his/her hands?	
7	Does your child throw a small ball or toy with a forward arm motion? (If he/she simply drops the ball, enter a cross under "Not yet")	
8	Does your child stack a small block or toy on top of another one? (For example, small boxes or toys about 3 cm in size)	
9	Does your child turn the pages of a book by himself/herself? (He/she may turn more than one page at a time.)	
10	Does your child play with a doll or stuffed animal by hugging it?	
11	Does your child try to get your attention show you something by pulling your hand or clothes?	
12	Does your child come to you when he/she needs help, such as with opening a box?	
13	Does your child copy the activities you do, such as wipe up a spill, sweep, shave, or comb hair?	

Questions from ASQ in Q6

	About your child's motor development.	**Response options**
1	Without holding onto anything for support, does your child kick a ball by swinging his/her leg forward?	1-Yes 2-A few times 3-Not yet
2	Can your child catch a large ball with both hands?	
3	When drawing, does your child hold a pencil, crayon, or pen between his/her fingers and thumb like an adult does?	
4	Can your child undo one or more buttons?	
	Understanding what others say and being able to communicate	**Response options**
1	Without showing him/her first, does your child point to the correct picture when you say, "Where is the cat" or "Where is the dog"? Your child must only point at the correct picture	1-Yes 2-Sometimes 3-Not yet
2	When you ask your child to point to his/her eyes, nose, hair, feet, ears, and so forth, does he/she correctly point to at least seven body parts? (The child can point to parts of	

	himself/herself, you, or a doll.)	
3	Does your child make sentences that are three or four words long?	
4	Without giving him/her help by pointing or using gestures, ask your child to "Put the shoe on the table" and "Put the book under the chair". Does your child carry out both of these directions correctly?	
5	When looking at a picture book, does your child tell you what is happening or what action is taking place in the picture? (For example, "Barking", "Running", "Eating" and "Crying"?) You may ask, "What is the dog (or boy) doing?"	
6	Can your child tell you at least two things about an object he/she is familiar with? If you say, for example, "Tell me about your ball", will your child answer by saying something like "It is round, I can throw it, it is big"?	

Questions from ASQ in Q-5year

	The child's ability to understand and tell	**Response options**
1	Can your child tell you at least two things about common object? For example, if you say to your child, "Tell me about the ball", does he say something like, "It is round. I throw it. It is big"?	1-Yes 2-Sometimes 3-Not yet
2	Without giving your child help by pointing or repeating directions, does your child follow three directions that are *unrelated* to one another? Give all three directions before your child starts. For example, you may ask your child to "Clap your hands, walk to the door, and sit down" or "Give me the pen, open the book, and stand up."	
3	Does your child use four- and five- word sentences? For example, does your child say, "I want the car"?	
4	When talking about something that already happened, does your child use words that end in "ed" such as *walked, jumped* or *played*? Ask your child questions, such as "How did you get to the store?" ("We walked.") "What did you do at your friend's house?" ("We played.")	
5	Does your child use comparison words, such as *heavier, stronger* or *shorter*? Ask your child questions, such as "A car is *big*, but a bus is _____" (bigger); "A cat is *heavy*, but a man is ____" (heavier); A TV is *small*, but a book is ____ " (smaller).	
6	Does your child answer the following questions: 1. "What do you do when you are hungry?" (Acceptable answers include: "Get food", "Eat", "Ask for something to eat", and "Have a snack".) 2. "What do you do when you are tired?" (Acceptable answers include: "Take a nap", "Rest", "Go to sleep", "Go to bed", "Lie down", and "Sit down.")	
7	Does your child repeat the sentences shown below back to you, without any mistakes? You may repeat each sentence one time. Mark "yes" if your child repeats both sentences without mistakes or "sometimes" if your child repeats one sentence without mistakes. "Jane hides her shoes for Maria to find." "Al read the blue book under his bed."	

The questions (though differ from questionnaire to questionnaire, see the tables above) were used in all versions of Q4, Q5, Q6 and Q-5year.

Section No. in different versions of the questionnaires

Q4	4A:21	4B:35	4F:35	4G:36	4H:36
Q5	5A:33	5B:32	5C:32	5D:32	5E:32
Q6	6A & 6B & 6C & 6D: 17 (motor skills); 21(communication)				
Q-5year	5yearA:29		5yearB:28		

2. Description of original instrument: Ages and Stages Questionnaires (ASQ)

The ASQ (Squires, et al., 1999) is a series of 19 parent-completed screening questionnaires for child development, specific to the ages of 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54, and 60 months. Each questionnaire consists of five 6-item scales: Communication, Gross Motor, Fine Motor, Problem Solving, and Personal-Social. Parents answer "yes", "sometimes", or "not yet", according to whether the child can do the activity. The questionnaires were back translated into Norwegian (versions in both standard forms — Bokmål and Nynorsk — were produced). Janson and Smith (2003) presented descriptive results of the study along with details of the translation and adaptation.

Psychometric Information:

Cronbach's alphas on the communication area ranged from .63 to .74 at different ages. On the gross motor area, Cronbach's alphas ranged from .53 to .87 across ages, whereas on the fine motor area the alpha ranged from .49 to .86. Test-retest reliability, measured as percentage agreement between classifications based on the questionnaires completed twice by 175 parents at

2-weeks intervals, was 94%. Inter-observer reliability, measured as percentage agreement between classifications based on the questionnaires completed by 112 parents and those completed by two examiners, was 94%. As for the general validity of the ASQ, the questionnaires as reported in percent agreement between questionnaires and standardized assessments reached an 84% overall agreement. Specificity remained high (86%) across questionnaire intervals and standardized assessments. Sensitivity was lower, averaging 72% (Squires, et al., 1999). The construct validity of the ASQ was also supported in a Norwegian Study (Richter & Janson, 2007)

Base References/Primary Citations:

Janson, H. & Smith, L. (2003). *Norsk manualsupplement til Ages and Stages Questionnaires* [Norwegian manual supplement for the Ages and Stages Questionnaires]. Oslo, Norway: Regionsenter for barne- og ungdomspsykiatri, Helseregion Øst/Sør.

Squires, J., Potter, L., & Bricker, D. (1999). *The ASQ User's Guide* (2nd edition). Baltimore: Paul H. Brookes Publishing Co.

Richter & Janson (2007). A validation study of the Norwegian version of the Ages and Stages Questionnaire. *Acta Pædiatrica* 96:748-752.

Modifications:

In each questionnaire, only selected items from the ASQ were used. Not all questions were selected from age-appropriate questionnaires in order to get a greater variation in answers (for example, in Q6 two questions on motor skills were chosen from the 48-month questionnaire).

3. **Rationale for choosing the questions:**
   The ASQ has been found to be an effective diagnostic tool of developmental delay and/or disturbances (Richter & Janson, 2007).

4. **Revision during the data collection period:**
   No revisions have been made.

Intelligibility/Complexity of 3-year-old Children's Utterances

1. **Name of original scale:** The name of the original scale is not known, but the scale has been used by Dale, et al., (2003) in the Twins Early Development Study (TEDS).

	About your child's language skills. *(Enter a cross for the option that best describes the way your child talks.)*
1	Not yet talking
2	He/she is talking, but you can't understand him/her
3	Talking in one-word utterances, such as "milk" or "down"
4	Talking in 2- to 3-word phrases, such as "me got ball" or "give doll"
5	Talking in fairly complete sentences, such as "I got a doll" or "can I go outside?"
6	Talking in long and complicated sentences, such as "when I went to the park, I went on the swings" or "I saw a man standing on the corner"

The instrument was used in all versions of Q6.

Section No. in different versions of the questionnaire

Q6	6A:18	6B:18	6C:18	6D:18

2. **Description of original instrument**:

Parents are asked which of the six response categories best describes how their child talks. The list of options is often perceived as a 6-point ordinal grammar rating with the sixth indicating the most complex use of language. It should be noted that response categories 1 and 2 are not about grammar but signify that children's speech are not ratable for grammar; response categories 3-6 indicate length of utterance/grammar complexity.

Psychometric Information:

Sample – Data from 5208 families with twins born in England and Wales in 1994-1995.

Validity and reliability – for the twins selected for low parent-report language, the mean of the tester-administered composite was -1.23, approximately the 11th percentile. In addition to regression to the mean, some of the discrepancy reflects the fact that the tester-administered battery included a wider range of language measures, including articulation, phonological awareness and narrative skills (Dale, et al., 2003).

Base References/Primary Citations:

Dale, P. S., Price, T. S., Bishop, D. V. M., & Plomin, R. (2003). Outcomes of Early Language Delay: I. Predicting Persistent and Transient Language Difficulties at 3 and 4 Years. *Journal of Speech, Language, and Hearing Research 46:* 544-560.

3. **Rationale for choosing the questions:**

This scale (response categories 3-6) can be used to indicate the grammatical complexity level of 3-year-old children. Delayed acquisition of milestones can be the first indication of language impairment.

4. **Revision during the data collection period:**

No revisions have been made.

Non-Verbal Communication Checklist (NVCC)

1. Name of original scale: Non-Verbal Communication Checklist (NVCC)

	Your child's body language. *(Enter a cross in the box of the answer that fits your child best for each statement.)*	**Response options**
1	When you enthusiastically say: "Where is the ball (or other toy)?", will your child point towards the toy, even if it is more than 1 metre away?	1- Yes, usually 2- Rarely 3- Not yet
2	When you look at a distant object and surprised and excited, say: "WOW...what's that?", does he/she turn his/her head in the same direction as you?	
3	Does your child use sounds or words together with gestures (for example, uses sounds when pointing or reaching towards toys or objects)?	
4	Does your child show you toys by looking at you and holding the toy up towards you (from a distance just so you can look at it)?	

The four items were used in all versions of Q6 and versions 5C, 5D, 5E of Q5. Only the first three items were used in 5B; none of the questions were used in 5A.

* Section No. in different versions of the questionnaires

Q5	5A: N/A	5B:33	5C:33	5D:33	5E:33
Q6	6A:19	6B:19	6C:19	6D:19	

2. Description of original instrument: **Non-Verbal Communication Checklist (NVCC)**

The Non-Verbal Communication Checklist (Schjolberg, 2003; 2005) is a parental-report Autism screening tool developed for use with children younger than 30 months of age, focusing on the development of non-verbal skills used in play and interaction. The original questionnaire includes 12 questions. The first five focus on whether the child initiates activities without the mother doing something first. The next five questions focus on how the child responds to things the mother does. The questions are answered "yes, usually", "rarely" or "not yet". The last two questions ask the mother to rate the child's communicative development and general development. These questions are answered with "earlier than", "similar to", or "later than" peers. A selection of four questions from the original scale was chosen for use in the MoBa. Two of the questions focus on child responding (items 1 & 2) and the other two (items 3 & 4) focus on child initiating.

Psychometric Information:

The NVCC has been used for screening in a Well baby clinic sample of 1,243 children ranging from 8.2 to 36.8 months old (mean age was 22.6 months; sd=7.1) in addition to a referred sample of 41 children. Test retest reliability was assessed for 110 parents filling out the checklist twice within 3 weeks: Pearsons r was .87 for the NVCC total score. Inter-rater agreement rate was 88%. Kappa for screen positive was .81. Cronbach's alpha for the entire checklist was .79. The inter-item correlations ranged from .12 to .50 (Schjolberg, 2005). Cronbach's alphas for the 4 items are .49 and .70 respectively in MoBa Q5 and Q6.

Base References/Primary Citations:

Schjolberg, S. (2003). Early Identification of Autism Spectrum Disorders. Paper presented at conference the Social Brain. Gøteborg, Sweden.

Schjolberg, S. (2005). Test retest reliability of a screening checklist for Autism Spectrum disorders in young children. Paper presented at International Meeting for Autism Research. Boston, Massachusetts.

3. **Rationale for choosing the questions:**
   This instrument is chosen to cover an area of communication that is not dependent on language skills and taps into aspects of joint attention not already covered through the use of M-CHAT or ESAT.

4. **Revision during the data collection period:**
   The four questions were used in versions C, D, and E of Q5. Only the first three questions were used in 5B; none of the questions were used in 5A. No further revisions have been made.

Children's Communication Checklist-2 (CCC-2)

1. Name of original scale: The Children's Communication Checklist-2 (CCC-2)

Q-5year	Q-8year	How often do you think this is typical for your child?	Response options
	1	Forgets words s/he knows – e.g. instead of "rhinoceros" may say "you know, the animal with the horn on its nose…"	1- Never or rarely 2- Sometimes 3- Often 4- Very often
3	2	Uses terms like "he" or "it" without making it clear what s/he is talking about. For instance, when talking about a film, might say "he was really great" without explaining who "he" is.	
	3	Misses the point of jokes and puns (though may be amused by nonverbal humour such as slapstick).	
5	4	Can be hard to tell if s/he is talking about something real or make-believe.	
	5	Leaves off past tense *–ed* endings on words. May for instance say "John kick the ball" instead of "John kicked the ball", or "Eva buy soda" instead of "Eva bought soda".	
	6	Takes in just 1-2 words in a sentence, and so misinterprets what has been said. E.g. if someone says "I want to go skating next week", s/he may think they've been skating, or want to go now.	
2	7	Gets sequence of events muddled up when telling a story or describing event. E.g. if describing a film, might talk about the end before the beginning.	
	8	Doesn't explain what s/he is talking about to someone who doesn't share his/her experiences; for instance, might talk about "Jon" without explaining who he is.	
1	9	It is hard to make sense of what s/he is saying, even though the words are clearly spoken.	
4	10	Uses appropriate language to talk about what s/he plans to do in the future (e.g. what s/he will do tomorrow, or plans for going on holiday).	
	11	You can have an enjoyable, interesting conversation with him/her.	
	12	Can produce long and complicated sentences such as: "When we went to the park I had a go on the swings"; "I saw this man standing on the corner".	
	13	Uses words that refer to whole classes of objects, rather than a specific item. E.g. refers to a table, chair and drawers as "furniture", or to apples, bananas and pears as "fruit".	
	14	Speaks fluently and clearly, producing all speech sounds accurately and without hesitation.	
6	15	Explains a past event clearly (e.g. what s/he did at school or what happened at a football game).	
	16	When answering a question, provides enough information without being over-precise.	

Selective items from the CCC-2 were used in all versions of Q-5year and Q-8year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:33	5yearB:32	
Q-8year	8yearA: 20	8yearB: 20	8yearC:20

2. Description of original scale: The Children's Communication Checklist-2 (CCC-2)

CCC-2 (Bishop 2003, 2006) is a measure designed to assess the communication skills of children 4 to 16.11 years of age. Initially developed in the United Kingdom, the CCC-2 has been adapted for use in the United States (Bishop, 2006). The purposes of the CCC-2 are the identification of pragmatic language impairment, screening of receptive and expressive language skills, and assistance in screening for ASD. The CCC-2 consists of 70 items that are divided into 10 scales (Speech, Syntax, Semantics, Coherence, Initiation, Scripted Language, Context, and Nonverbal Communication, Social Relations and Interests), each with 7 items. Five items on each subscale tap into communicative deficits, and two items target communicative strengths. A 13-item short scale (CCC-S) was developed by Bishop and Norbury (2004) as a brief screening instrument to help identify children with potential speech, language and communication needs. Six items from

the Coherence subscale were selected in Q-5year; the CCC-S plus 3 items (item 4, 8, and 9 in Q-8year) were selected in Q-8year.

Psychometric Information:
The U.S. Edition of the CCC-2 was standardized on 950 American children. Internal consistency reliability coefficients ranged from .94 to .96 across age groups. Validity was assessed by calculating classification rates for a variety of matched clinical groups based on GCC scores at 1, 1.5, and 2.0 SDs below the mean. For the group with ASD, 89% of the children were identified as such based on a GCC 1.0 SD below the mean. Based on these results, the CCC-2 demonstrates good reliability and validity (Bishop, 2006). Cronbach's alpha for CCC-S is .87; correlation with GCC: r= -.88 (Bishop & Norbury 2004).

Base References/Primary Citations:
Bishop, D.V.M. (2003). *Children's Communication Checklist-2*. London: Pearson.

Bishop, D. V.M. (2006). *Children's Communication Checklist-2* (U.S. Edition). New York, NY: The Psychological Corporation.

Norbury, C.F., Nash, M., Baird, G., & Bishop, D. V.M. (2004). Using a parental checklist to identify diagnostic groups in children with communication impairment: A validation of Children's Communication Checklist-2. *International Journal of Language & Communication Disorders* 39: 345-364.

3. **Rationale for choosing the instrument:**
The CCC-2 appears to be a well-constructed instrument that has both face validity and reliability to achieve its stated purpose of assisting in identifying children with language and communication problems, especially in the area of pragmatic communication skills.

4. **Revision during the data collection period:**
Some revisions in question order from version A to B in Q-5year. No further revisions have been made.

Checklist of 20 Statements about Language-Related Difficulties (Språk20)

1. **Name of original scale:** The checklist of 20 Statements about Language-Related Difficulties (Språk 20)

	How do these statements fit the child?	Response options
1	Forgets words s/he knows the meaning of	1- Doesn't fit the child, absolutely wrong 2- 2 3- Both yes and no 4- 4 5- Fits well with the child, absolutely right
2	Confuses words with similar meaning (e.g. shirt, sweater, jacket)	
3	Has difficulty understanding the meaning of common words	
4	Has difficulty answering questions as quickly as other children	
5	Is often searching for the right words	
6	Uses incomplete sentences	
7	Uses short sentences when s/he answers questions	
8	Has difficulty retelling a story s/he has heard	
9	It doesn't seem like what s/he is learning is remembered	
10	Has difficulty remembering things	
11	Has difficulty understanding what others are saying	
12	Misconceive instructions and messages	
13	Has problems remembering messages	
14	Misunderstands context and what is going on	
15	Is difficult to understand	
16	Has difficulty expressing wishes and needs	
17	Is not understood by others	
18	Seldom initiates conversation with others	
19	Has difficulties in pronunciation	
20	Is not able to have a dialogue with peers	

The full scale with 20 items was used in both versions of Q-5year; The Semantic subscale was used in all versions of Q-Cc and Q-8year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:32	5yearB:31	
Q-Cc	CcA:52	CcB:52	
Q-8year	8yearA: 21	8yearB: 21	8yearC:21

2. **Description of original scale**: **20 Statements about Language-Related Difficulties (Språk 20)**
   Språk 20 is a checklist developed by Ottem (2009), a Norwegian psychologist at Bredvet Competence Centre, to identify children with risk for language impairment. The checklist consists of 20 statements describing language-related difficulties, which can be further divided into three subscales: Semantics (items 1-8), Receptive (items 9-14) and Expressive language (items 15-20). All answers are scored on a 5-point Likert scale from '1-Doesn't fit the child, absolutely wrong' to '5-fits fine with the child, absolutely right.'

   Psychometric Information:
   Internal consistency (Cronbach's alpha) for full scale and the Semantic subscale are .97 and .95. Specificity rates for full scale and the Semantic subscale are .87 and .88. Sensitivity rates are: .83 for the full scale and .81 for the Semantic subscale. The Språk20 has also demonstrated concurrent validity (Ottem, 2009).

   Base References/Primary Citations:
   Ottem, E. (2009). 20 spørsmål om språkferdigheter – en analyse av sammenhengen mellom observasjonsdata og testdata. *Skolepsykologi* 1: 11-27.

3. **Rationale for choosing the instrument:**
   The checklist is a well-used Norwegian instrument to identify children with language impairment in terms of semantics, receptive and expressive language.

4. **Revision during the data collection period:**
   Only 7 items (items 2-8) were included in versions A and B of Q-8year; version C of Q-8year included all the 8 items from the Semantic subscale. No further revisions have been made.

Speech and Language Assessment Scale (SLAS)

1. Name of original scale: Speech and Language Assessment Scale (SLAS)

	About the child's abilities and skills compared with peers. *Enter a cross from 1-5 for each line according to how well the statement fits your child.*	**Response options**
1	My child's ability to ask questions properly is…	1-Very much lower 2- 2 3-Typical for age 4-4 5-Very much higher
2	My child's ability to answer questions properly is…	
3	My child's ability to say sentences clearly enough to be understood by strangers is…	
4	The number of words my child knows is…	
5	My child's ability to use his/her words correctly is…	
6	My child's ability to get his/her message across to others when talking is…	
7	My child's ability to use proper words when talking to others is…	
8	My child's ability to get what he/she wants by talking is…	
9	My child's ability to start a conversation going with other children is…	
10	My child's ability to keep a conversation going with other children is…	
11	The length of this child's sentences is…	
12	My child's ability to make 'grown up' sentences is…	
13	My child's ability to correctly say the sounds in individual words is…	

The items were used in all versions of Q-5year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:39	5yearB:38

2. Description of original scale: **Speech and Language Assessment Scale (SLAS)**

The SLAS (Rice, et al., 1989) consists of 14 reliable items which covers several dimensions of communication. The scale intends to address children's articulation, semantics, vocabulary, sentence construction, and conversational skills compared with peers. The questions were answered in a 5-point Likert scale from 'very much lower' to 'very much higher'.

Psychometric Information:

The inter-rater reliability between mothers and fathers was moderately high to high for all 5 composite scales. The three composite scales articulation, assertiveness and semantics emerged as the most effective for predicting group membership, correctly classifying 86% of the children in each sample (range = 75-95 %) (Hadley & Rice, 1993). The SLAS showed good construct validity (Weinberg, 1991).

Base References/Primary Citations:

Rice, M.L., Wilcox, K.A., Liebhaber, G.K., & Hadley, P.A. (1989). *The speech and Language Assessment Scale*. Unpublished, University of Kansas, USA.

Hadley P.A. & Rice, M.L. (1993). Parental judgments of preschoolers' speech and language development: a resource for assessment and IEP1 planning. *Topics in Speech and Language* 14: 278-288.

Weinberg, A.M. (1991). *Construct validity of the Speech and Language Assessment Scale: A tool for recording parent judgments*. Unpublished master's thesis, University of Kansas, USA.

3. Rationale for choosing the instrument:

The SLAS discriminates between children with typical development and children with speech/language impairments. Thus, it constitutes a tool for determining group membership.

4. **Revision during the data collection period:**
   No revisions have been made.

Strength and Difficulties Questionnaire (SDQ)-Prosocial Subscale

1. Name of original scale: Strength and Difficulties Questionnaire (SDQ)-Prosocial Subscale

	About your child's social skills.	Response options
1	Your child shares readily with other children, for example treats, toys, pencils	1- Disagree 2- Partially agree 3- Totally agree
2	Your child is helpful if someone is hurt, upset or feeling ill	
3	Your child is considerate of other people's feelings	
4	Your child is kind to younger children	
5	Your child often volunteers to help others (parents, teachers, other children)	

The instrument was used in all versions of Q6.

Section No. in different versions of the questionnaire

Q6	6A:20	6B:20	6C:20	6D:20

2. Description of original instrument: **Strength and Difficulties Questionnaire (SDQ)-Prosocial Subscale**

The SDQ (Goodman, 1997) is a brief behavioural screening questionnaire about 3-16 year olds. The original scale is composed of 25 questions. Five subdomains are covered: Prosocial, hyperactivity-inattention, emotional, conduct, and peer. The five items from SDQ covering prosocial behavior are used in MoBa. Questions are answered on a 3-point likert scale, ranging from "disagree", through "partially agree" to "totally agree".

Psychometric Information:

A nationwide epidemiological sample of 10,438 British 5–15-year-olds obtained SDQs from 96% of parents, 70% of teachers, and 91% of 11–15-year-olds. Cronbach's α was .73, cross-informant correlation was .34, and retest stability after 4 to 6 months was .62. SDQ scores above the 90th percentile predicted a substantially raised probability of independently diagnosed psychiatric disorders (mean odds ratio: 15.7 for parent scales, 15.2 for teacher scales, 6.2 for youth scales). The specificity and negative predictive value was .95, whereas the sensitivity and positive predictive value was .35 (Goodman, 2001). In the MoBa sample, Cronbach's alpha for the 5-item prosocial subscale is .76.

Base References/Primary Citations:

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry* 38: 581-586.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry 40:* 1337-1345.

3. Rationale for choosing the questions:

The SDQ is well suited for epidemiological research. It is short, but still gives an accurate survey of some of the most important dimensions in children's mental health. The SDQ is used in several large Norwegian epidemiological surveys (cf. Heyerdahl, 2003) in addition to the MoBa. The Prosocial Subscale was included as this dimension is not covered in other scales in the Q6.

4. Revision during the data collection period:

No revisions have been made.

Added reference

Heyerdahl, S. (2003). SDQ – Strength and Difficulties Questionnaire: En orientering om et nytt spørreskjema for kartlegging av mental helse hos barn og unge, brukt i UNGHUBRO, OPPHED og TROFINN. *Norsk Epidemiologi* 13 (1): 127-135.

NB! Both ESAT and M-CHAT are screening instruments for autistic traits, and need to be looked together. Due to redundancy of items between the two scales and limited space in the questionnaires, for the most similar items only one scale was selected.

Early Screening of Autistic Traits Questionnaire (ESAT)

1. Name of original scale: Early Screening of Autistic Traits Questionnaire (ESAT)

Q5	Version A	Version B	Version C	Version D	Version E	About your child's behavior. We are asking you about how your child usually is. If something happens seldom (for instance, if you have only seen it once or twice), enter a cross under "No".	Response options
1		X	X	X	X	Is your child interested in different sorts of toys or objects, and not for instance mainly in cars or buttons?	
2	X	X	X	X	X	Can your child play with toys in varied ways (not just fiddling, mouthing or dropping them)?	
3		X				When your child expresses his/her feelings, for instance by crying or smiling, is that mostly in expected and appropriate moments?	
4		X	X	X	X	Does your child react in a normal way to sensory stimulation, such as coldness, warmth, light, pain or tickling?	
5		X	X	X	X	Can you easily tell from the face of your child how he/she feels?	
6		X				Is it easy to make eye-contact with your child?	
7		X	X	X	X	When your child has been left alone for some time, does he/she try to attract your attention, for instance by crying or calling?	
8		X	X	X	X	Is the behaviour of your child free of stereotyped repetitive movements like banging his/her head or rocking his/her body?	
9		X				Does your child, on his/her own accord, ever bring objects over to you or show you something?	
10		X				Does your child show to be interested in other children or adults?	
11		X	X	X	X	Does your child like to be cuddled?	
12		X				Does your child ever smile at you or at other people?	
13		X				Does your child like playing games with others, such as peek-a-boo, ride on someone's knee, or to be swung?	1- Yes
14		X	X	X	X	Does your child react when spoken to, for instance, by looking, listening, smiling, speaking or babbling?	2- No

Items selected into Q5 differ in different versions. In the table above, a cross (X) is used to mark the selected items in Q5; only items 6 &14 were used in Q6. The number appears in the order as used in the original ESAT scale.

Section No. in different versions of the questionnaires

Q5	5A:35/36	5B:35/36	5C:35/36	5D:35/36	5E:35/36
Q6	6A:22	6B:22	6C:22	6D:22	

2. Description of original instrument: **Early Screening of Autistic Traits Questionnaire (ESAT)**

The ESAT (Swinkels, et al., 2006) is a level-one screener originally designed for use with 14-15 month old children. The ESAT consists of 14 parent report items measuring early social-communication skills, play, and restricted and repetitive behaviours, answered with yes or no. Children who failed three or more items are considered to be at risk for Autism Spectrum Disorder (ASD).

Psychometric Information:

Dietz et al. (2006) screened 31,724 Dutch children aged 14-15 months in a two-part process. Initially children were screened at well baby visits using a 4-item questionnaire administered by physicians. A psychologist using the 14-item ESAT then evaluated children who screened positive in their homes. Children who failed 3 or more items were invited for a comprehensive

psychiatric evaluation. Eighteen children with ASD were detected and an additional 55 children were identified as having developmental concerns. This yields a positive predictive power of .25, although none of the children identified by the ESAT were typically developing. Children who received an ASD diagnosis were re-evaluated at age 42 months, and stability of diagnosis was observed in 14 of 16 children.

Base References/Primary Citations:

Dietz C, Swinkels S, van Daalen E, van Engeland H, Buitelyear, KJ. 2006. Screening for autistic spectrum disorder in children aged 14-15 months. II: Population screening with the Early Screening of Autistic Traits Questionnaire (ESAT), Design and general findings. *Journal of Autism and Developmental Disorders* 36: 713-722.

Swinkels S, Dietz C, van Daalen E, van Engeland H, Buitelyear, KJ. 2006. Screening for Autistic Spectrum in Children Aged 14 to 15 months. I: The Development of the Early Screening for Autistic Traits Questionnaire (ESAT). *Journal of autism and Developmental Disorders* 36: 723-732.

Modifications:

Some modifications have been made on item 8 in version B of Q5. English translation of item 8 in version B: Does your child ever show a peculiar way of behaving that is constantly repeated like banging his/her head or rocking back and forth? Original English for item 8: Is the behaviour of your child without stereotyped repetitive movements like banging his/her head or rocking his/her whole body? The original item from the ESAT is used in later versions of the questionnaire.

3. Rationale for choosing the questions:

Due to the Autism Birth Cohort (ABC) study, a sub-study of the MoBa, including items from different screening instruments as well as covering different aspects of "autistic traits" has been of importance for studying symptom trajectories from 6 months and upwards.

4. Revision during the data collection period:

Items selected into Q5 differ in different versions (see table above for details).

Modified Checklist for Autism in Toddlers (M-CHAT)

1. Name of original scale: The Modified Checklist for Autism in Toddlers (M-CHAT)

Q5	Version A	Version B	Version C	Version D	Version E	More about your child's play and behaviour. We are asking you again about how your child usually is. If something seldom happens (for instance, if you have only seen it once or twice), enter a cross under "No".	Response options
1	X		X	X	X	Does your child enjoy being swung, bounced on your knee, etc.?	1- Yes 2- No
2	X	X	X	X	X	Does your child take an interest in other children?	
3	X	X	X	X	X	Does your child like climbing on things, such as up stairs?	
4	X		X	X	X	Does your child enjoy playing peek-a-boo/hide-and-seek?	
5	X	X	X	X	X	Does your child ever pretend, for example, to talk on the phone or take care of dolls, or pretend other things?	
6			X	X	X	Does your child ever use his/her index finger to point, to ask for something?	
7	X	X	X	X	X	Does your child ever use his/her index finger to point, to indicate interest in something?	
8	X	X	X	X	X	Can your child play properly with small toys (e.g. cars or bricks) without just mouthing, fiddling, or dropping them?	
9	X	X	X	X	X	Does your child ever bring objects over to you to show you something?	
10			X	X	X	Does your child look you in the eye for more than a second or two?	
11		X	X	X	X	Does your child ever seem oversensitive to noise? (e.g., plugging ears)	
12			X	X	X	Does your child smile in response to your face or your smile?	
13		X	X	X	X	Does your child imitate you? (e.g., you make a face-will your child imitate it?)	
14		X	X	X	X	Does your child respond to his/her name when you call?	
15		X	X	X	X	If you point at a toy across the room, does your child look at it?	
*16			X	X	X	Does your child walk?	
17			X	X	X	Does your child look at things you are looking at?	
18		X	X	X	X	Does your child make unusual finger movements near his/her face?	
19		X	X	X	X	Does your child try to attract your attention to his/her own activity?	
20			X	X	X	Have you ever wondered if your child is deaf?	
21		X	X	X	X	Does your child understand what people say?	
22		X	X	X	X	Does your child sometimes stare at nothing or wander with no purpose?	
23		X	X	X	X	Does your child look at your face to check your reaction when faced with something unfamiliar?	

* Item 16 is found in section 31 in version C, D, and E of Q5.

Items selected into Q5 differ in different versions. In the table above, a cross (X) is used to mark the selected items into Q5; 7 items (2, 7, 9, 11, 13, 14, and 15) were used in all versions of Q6. The number appears in the order as used in the original M-CHAT scale.

Section number in different versions of the questionnaires

Q5	5A:35/36	5B:35/36	5C:31/35/36	5D:31/35/36	5E:31/35/36
Q6	6A:22	6B:22	6C:22	6D:22	

2. Description of original instrument: **The Modified Checklist for Autism in Toddlers (M-CHAT)**

The M-CHAT (Robins et al., 2001) is a 23 item (yes/no) parent report checklist designed to identify signs of ASD in children aged 16-30 months. It includes items that ask about language, sensory responsiveness or arousal modulation, theory of mind, motor functions or social/emotional functions or the precursors to these functions. A subset of six items pertaining to social relatedness and communication (namely, items 2, 7, 9, 13, 14 &15) was found to have the best discriminability between children diagnosed with and without autism. The M-CHAT is an extension of the

Checklist for Autism in Toddlers (CHAT; Baron-Cohen, Allen & Gillberg, 1992). The format and the first 9 items are directly taken from the CHAT.

Psychometric Information:
Cronbach's alphas for the entire checklist and for the subset of 6 items was .85 and .83, respectively. Discriminant function analysis found high classification accuracy, but positive predictive power (PPP) was estimated at .36. A follow-up interview resulted in a decreased false positive rate and yielded an estimate of .68 for PPP (Robins et al., 2001). The sensitivity of the M-CHAT was .92 for the total score, but specificity was low at .27 (Eaves, et al., 2006).

Base References/Primary Citations:
Robins D L, Fein D, Barton M L, and Green J A. (2001). The Modified Checklist for Autism in Toddlers: An Initial Study Investigating the Early Detection of Autism and Pervasive Developmental Disorders. *Journal of Autism and Developmental Disorders,* 31(2):131-144.

Baron-Cohen S, Allen J, Gillberg C. 1992. Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *The British Journal of Psychiatry* 161(6):839-843.

Eaves L, Wingert H, Ho H H. 2006. Screening for autism, Agreement with diagnosis. *Autism* 10(3): 229-242.

3. Rationale for choosing the questions:
The M-CHAT was chosen in the MoBa due to the possibility to look at screening properties for autism as well as to form a basis to study developmental trajectories of non-verbal communication and autistic traits.

4. Revision during the data collection period:
In Q5, the entire checklist was used in versions C, D and E; only selective items were used in version A and B of Q5. In Q6, the subset of 7 items (items 2, 7, 9, 11, 13, 14, and 15) found to be the best discriminators of children diagnosed with ASD were selected.

Childhood Asperger Syndrome Test (CAST)

1. Name of original scale: Childhood Asperger Syndrome Test (CAST)

	How do these statements fit the child?	Response options
1	Does s/he appear to have an unusual memory for details?	
2	Can s/he keep a two-way conversation going?	
3	Does s/he have at least one good friend?	
4	Does s/he have an unusual eye gaze, facial expression, voice or gestures?	
5	Does s/he prefer imaginative activities such as play-acting or story-telling, rather than numbers or lists of facts?	
6	Is it important to him/ her to fit in with the peer group?	
7	Does s/he tend to take things literally?	
8	Does s/he have an odd style of communication; old-fashioned, formal, or pedantic?	
9	Does s/he have a strong interest in an unusual topic?	1-No
10	Does s/he like to do things over and over again, in the same way all the time?	2- Yes
11	Does s/he find it easy to interact with other children?	
12	Does s/he mostly have the same interests as his/ her peers?	
13	Are people important to him/ her?	
14	Does s/he often do or say things that are tactless or socially inappropriate?	
15	Rather solitary and tends to play alone?	
16	Does s/he have any unusual or repetitive movements?	
17	Is his/ her social behavior very one-sided and always on his/ her own terms?	
18	Does s/he sometimes lose the listener because of not explaining what s/he is talking about?	
19	Does s/he care how s/he is perceived by the rest of the group?	
20	Does s/he often turn conversations to his/ her favorite subject rather than following what the other person wants to talk about?	

The questions were used in version A of Q-5year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:35	5yearB:N/A

2. Description of original scale: **Childhood Asperger Syndrome Test (CAST)**

*CAST (*Scott, et al. 2002*)* is a 37-item, yes or no evaluation aimed at parents. The questionnaire was developed by the Autism Research Centre at the University of Cambridge, for identifying children at risk for Asperger Syndrome and related conditions in a clinical situation.

Psychometric Information:

The sensitivity of the CAST, at a designated cut-point of 15, was 100 percent, the specificity was 97 percent and the positive predictive value was 50 percent, using the group's consensus diagnosis as the gold standard (Williams, et al., 2004). Agreement above and below a screening cut-point of 15 was investigated. The kappa statistic for agreement (< 15 versus ≥ 15) was .70, and 97 percent (95 percent CI: 93–99 percent) of children did not move across the cut point of 15. The correlation between the two test scores was .83 (Spearman's rho) (Williams, et al., 2006).

Base References/Primary Citations:

Williams J, Scott F, Stott C, Allison C, Bolton P, Baron-Cohen S, & Brayne C. 2004. The CAST (Childhood Asperger Syndrome Test): Test Accuracy. *Autism* 9(1): 45-68.

Williams J, Scott F, Stott C, Allison C, Bolton P, Baron-Cohen S, & Brayne C. 2006. The Childhood Asperger Syndrome Test (CAST): Test-retest Reliability. *Autism* 10(4): 415-27.

Scott FJ, Baron-Cohen S, Bolton P, & Brayne C. 2002. The CAST (Childhood Asperger Syndrome Test): preliminary development of a UK screen for mainstream primary-school-age children. *Autism* 6(1): 9-31.

3. **Rationale for choosing the instrument:**
   This instrument aims at identifying Asperger syndrome from 4 years and onwards. It includes items similar to the SCQ, M-CHAT and ESAT already included in the MoBa study. If these instruments are not suitable for 5-year-old children, CAST would be a good substitute.

4. **Revision during the data collection period:**
   The questions were only used in version A of Q-5year. No further revisions have been made.

Social Communication Questionnaire (SCQ)

1. Name of original scale: Social Communication Questionnaire (SCQ)

	Your child's use of language with others *(Mark one box per question, whether you think it applies for your child or not)*	**Response options**
1	Is he/she now able to talk using short phrases or sentences?	1- Yes 2- No
2	Do you have a to and fro "conversation" with her/him that involves taking turns or building on what you have said?	
3	Does she/he ever use odd phrases or say the same thing over and over in almost exactly the same way (either phrases that she/he hears other people use or ones that she/he makes up)?	
4	Does your child ever use socially inappropriate questions or statements? For example, does your child ever regularly ask personal questions or make personal comments at awkward times?	
5	Does your child ever get his/her pronouns mixed up (e.g., saying *you* or *he/she* for *I*)?	
6	Does your child ever use words that he/she seems to have invented or made up her/himself; put things in odd, indirect ways; or use metaphorical ways of saying things (e.g., saying *hot rain* for *steam*)?	
7	Does your child ever say the same thing over and over in exactly the same way or insist that you say the same thing over and over again?	
	Your child's behavior (*Mark one box per question, whether you think it applies for your child or not)*	**Response options**
8	Does your child ever have things that he/she seems to have to do in a very particular way or order or rituals that the child insists that you go through?	1- Yes 2- No
9	Does your child's facial expression usually seem appropriate to the particular situation, as far as you can tell?	
10	Does your child ever use your hand like a tool or as if it were part of his/her own body (e.g., pointing with your finger or putting your hand on a doorknob to get you to open the door)?	
11	Does your child ever have any interests that preoccupy him/her and might seem odd to other people (e.g., traffic lights, drainpipes, or timetables)?	
12	Does your child ever seem to be more interested in parts of a toy or an object (e.g., spinning the wheels of a car), rather than in using the object as it was intended?	
13	Does your child ever have any special interests that are unusual in their intensity, but otherwise appropriate for his/her age and peer group (e.g., trains or dinosaurs)?	
14	Does your child ever seem to be *unusually* interested in the sight, feel, sound, taste, or smell of things or people?	
15	Does your child ever have any mannerisms or odd ways of moving his/her hands or fingers, such as flapping or moving his/her fingers in front of his/her eyes?	
16	Does your child ever have any complicated movements of his/her whole body, such as spinning or repeatedly bouncing up and down?	
17	Does your child ever injure himself/herself deliberately, such as by biting his/her arm or banging his/her head?	
18	Does your child ever have any objects (other than a soft toy or comfort blanket) that he/she has to carry around?	
	About social development and interest in others *(Mark one box per question, whether you think it applies for your child or not)*	**Response options**
19	Does your child have any particular friends or a best friend?	1- Yes 2- No
20	Does your child ever talk with you just to be friendly (rather than to get something)?	
21	Does your child ever spontaneously copy you (or other people) or what you are doing (such as vacuuming, gardening, or mending things)?	
22	Does your child ever spontaneously point at things around him/her just to show you things (not because he/she wants them)?	
23	Does your child ever use gestures, other than pointing or pulling your hand, to let you know what he/she wants?	
24	Does your child nod his/her head to indicate *yes*?	
25	Does your child shake his/her head to indicate *no*?	
26	Does your child usually look at you directly in the face when doing things with you or talking with you?	
27	Does your child smile back if someone smiles at him/her?	
28	Does your child ever show you things that interest him/her to engage your attention?	
29	Does your child ever offer to share things other than food with you?	
30	Does your child ever seem to want you to join in his/her enjoyment of something?	
31	Does your child ever try to comfort you when you are sad or hurt?	
32	If your child wants something or wants help, does he/she look at you and use gestures with sounds or words to get your attention?	
33	Does your child show a normal range of facial expressions?	
34	Does your child ever spontaneously join in and try to copy the actions in social games, such as *The*	

	Mulberry Bush or *London Bridge Is Falling Down*?	
35	Does your child play any pretend or make-believe games?	
36	Does your child seem interested in other children of approximately the same age whom he/she does not know?	
37	Does your child respond positively when another child approaches him/her?	
38	If you come into a room and start talking to your child without calling his/her name, does he/she usually look up and pay attention to you?	
39	Does your child ever play imaginative games with another child in such a way that you can tell that each child understands what the other is pretending?	
40	Does your child play cooperatively in games that need some form of joining in with a group of other children, such as hide-and-seek or ball games?	

The 40 items were used in all versions of Q6 and Q-8year.

Section No. in different versions of the questionnaires

Q6	6A:23-25	6B:23-25	6C:23-25	6D:23-25
Q-8year	8yearA:15-17	8yearB:15-17	8yearC:15-17	

2. Description of original instrument: **Social Communication Questionnaire (SCQ)**

The SCQ (Ritter, et al., 2003) is a parental-report Autism screening tool developed to serve as a practical piece of early childhood developmental screenings which parallels the Autism Diagnostic Interview-Revised (ADI-R; Lord, et al., 1994). It is a 40-question screening form designed for children with an age of 4.0 years (and a mental age of 2.0) which takes less than 10 minutes to complete and score. The items are administered in a yes/no response format.

Psychometric Information:

Internal consistency measurements on a total number of 214 cases range from .81 to .93. The agreement between the SCQ and the ADI-R at both Total Score and Domain Score level is high, with the agreements being substantially unaffected by age, gender, language level, and performance IQ. Agreement is, however, only moderate at the individual item level (Rutter, et al., 2003). Eaves, et al. (2006) described the use of the SCQ in 151 children aged 36-82 months and reported sensitivity and specificity estimates of .71 and .79 respectively, with lower estimates for children with high verbal IQs.

Base References/Primary Citations:

Rutter, M., Bailey, A., & Lord, C. (2003). *SCQ The Social Communication Questionnaire: Manual*. Los Angeles: Western Psychological Services.

Lord C, Rutter M. & Le Couteur A. (1994). Autism Diagnostic Interview-Revised: a revised version of a diagnostic interview for caregivers of individuals with possible pervasive developmental disorders. *The Journal of Autism and Developmental Disorders* 24 (5): 659–685.

Eaves L, Wingert H, Ho H. 2006. Screening for autism spectrum disorders with the social communication questionnaire. *Journal of Developmental Behavioral Pediatrics* 27:95-103.

3. Rationale for choosing the questions:

The SCQ provides a dimensional measure of ASD symptomatology, with a cutoff score that can be used to indicate the likelihood of an individual having ASD. The instrument can be used as a screening device, or to indicate approximate level of severity of ASD symptomatology, across groups or with respect to changes over time.

4. Revision during the data collection period:

No revisions have been made.

Infant Characteristics Questionnaire—6 Month Form (ICQ-6)

1. Name of original scale: Infant Characteristics Questionnaire—6 Months Form (ICQ-6)

	Say whether you agree or disagree with the following statements about the child's mood and temperament - how it is on a daily basis	Response options
1	The child cries and complains a lot	1- Completely disagree 2- Disagree 3- Disagree somewhat 4- Indifferent 5- Agree somewhat 6- Agree 7- Agree completely
2	The child is easy to calm when he/she cries	
3	The child is easily upset	
4	When the baby cries, he/she usually cries loudly and vigorously	
5	The child is easy to handle	
6	The child requires a lot of attention	
7	When left alone, he/she usually plays alone and is contented	
8	The child is so demanding that it would represent a considerable problem for most parents	
9	The child smiles and laughs frequently	
10	The child is easy to put to bed, and falls asleep quickly	

The 10 items were used in all versions of Q4.

Section No. in different versions of the questionnaire

Q4	4A:30	4B:44	4F:44	4G:45	4H:45

2. Description of original instrument: **Infant Characteristics Questionnaire—6 Months Form (ICQ-6)**

The ICQ-6(Bates, et al., 1979) is comprised of 24 items describing infant behavior. The parent ranks each item on a 7-point scale, indicating the level of perceived difficulty in dealing with the described behavior. Four subscales have been identified through principal components analyses: Fussy/Difficult, Unadaptable, Dull and Unpredictable. The questions in Q4 were chosen mainly from the Fussy/difficult subscales. One question concerning sleep and two questions about positive experiences were added after advice from the pilot group.

Psychometric Information:

The internal consistency of the ICQ-6 was assessed on a cross-validation sample (N=196) with the following alpha coefficients: Fussy/Difficult, .79, Unadaptable, .75, Dull, .39, and Unpredictable, .50. Test-retest reliability scores computed over 2 to 10 day intervals were as follows: Fussy/Difficult, .70, Unadaptable, .54, Dull, .57, and Unpredictable, .47. Fussy/Difficult is the most clear-cut and valid factor of the ICQ-6, because behaviour characterizing this dimension of an infant's temperament is most readily recognized. Convergence has been noted between ICQ factors and comparable variables in other parent report temperament instruments (Bates, et al., 1979).

Base References/Primary Citations:

Bates JE, Freeland CA, Lounsbury ML. 1979. Measurement of infant difficultness. Infant characteristic questionnaire (ICQ). *Child Development* 50: 794-803.

3. Rationale for choosing the questions:

The ICQ-6 measures parental perception of infant temperament, focusing on difficult temperament.

4. Revision during the data collection period:

No revisions have been made.

Emotionality, Activity and Shyness Temperament Questionnaire (EAS)

1. **Name of original scale:** The Emotionality, Activity and Shyness Temperament Questionnaire (EAS)

	To what extent do the following statements apply to your child's behaviour during the last two month?	Response options
1	Your child cries easily	1- Very typical 2- Quite typical 3- Neither/nor 4-Not so typical 5-Not at all typical
2	Your child is always on the go	
3	Your child prefers playing with others rather than alone	
4	Your child is off and running as soon as he/she wakes up in the morning	
5	Your child is very sociable	
6	Your child takes a long time to warm up to strangers	
7	Your child gets upset or sad easily	
8	Your child prefers quiet, inactive games to more active ones	
9	Your child likes to be with people	
10	Your child reacts intensely when upset	
11	Your child is very friendly with strangers	
12	Your child finds other people more fun than anything else	

The 12 items were used in all versions of Q5, Q6, and Q-5year.

Section No. in different versions of the questionnaires

Q5	5A:34	5B:34	5C:34	5D:34	5E:34
Q6	6A:27	6B:27	6C:27	6D:27	
Q-5year	5yearA:38	5yearB:37			

2. **Description of original instrument**: **The Emotionality, Activity and Shyness Temperament Questionnaire (EAS)**

The EAS temperament questionnaire measures the four temperament dimensions; Shyness (fear), Emotionality (irritability/anger), Sociability (Positive affect/including approach), and Activity (activity level). These are measured by subscales with five questions each. Mothers are asked to rate whether the 20 different statements apply to their child. There are five response categories from "very typical" to "not at all typical". Three questions from each temperament dimension are selected for use in the MoBa. The 12 selective items constitute the short form of the EAS.

Psychometric Information:

The Cronbach's alpha reliability estimates for the original instrument were estimated to be .71-.79 (in the 18-month, 30-month and 50-month material) for shyness, .61-.67 for emotionality, .48-.60 for sociability, and .68-.75 for activity (Mathiesen & Tambs, 1999). Estimates for the short-form scales were .70-.72 for shyness, .58-.61 for emotionality, .43-.45 for sociability, and .59-.62 for activity. Test-retest correlations for 18-30 months varied from .44 to .60 for original scores and from .40 to .58 for short-form scores. Corresponding values were .46-.61 and .43-.56 for 30-50 months and .37-.50 and .36-.49 for 18-50 months. The correlations between the short-form and original scores were: for 18, 30 and 50 months, respectively, .94, .95 and .95 for shyness, .95, .95 and .94 for emotionality, .92, .92 and .92 for sociability, and .94, .96 and .95 for activity.

Base References/Primary Citations:

Buss, A. H., & Plomin, R. (1984). *Temperament: Early Developing Personality Traits*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Mathiesen, K. S. & Tambs, K. (1999). The EAS Temperament Questionnaire—factor structure, age trends, reliability, and stability in a Norwegian sample. *Journal of Child Psychology and Psychiatry 40:* 431-439.

Modifications:
The wording on the following questions was changed from the original scale:
Original: Gets upset easily; MoBa: Gets upset or sad easily
Original: Finds people more stimulating than anything else; MoBa: Finds people more fun than anything else.

3. **Rationale for choosing the questions:**
   The EAS temperament questionnaire seems to be the scale most directly constructed to measure the four temperament dimensions; Shyness (fear), Emotionality (irritability/anger), Sociability (Positive affect/including approach), and Activity (activity level), exclusively and in a clear-cut way, and is found to have good psychometric properties.

4. **Revision during the data collection period:**
   No revisions have been made.

Child Behaviour CheckList (CBCL)

1. Name of original scale: Child Behaviour CheckList (CBCL)

Q5	Q6	Q-5year	Q-Cc	To what extent are the following statements true of your child's behaviour during the last two months?	Response options
17	1	1		Afraid to try new things	1-Not true 2-Somewhat or sometimes true 3-Very true or often true
1	2	2		Can't concentrate, can't pay attention for long	
3	3	3	4	Can't sit still, restless or overactive	
	4	4	2	Can't stand waiting, wants everything now	
6	5	5	6	Clings to adults or too dependent	
	6			Constipated, doesn't move bowels	
10	7	7		Defiant	
	8	8		Demands must be met immediately	
18	9	9	10	Disturbed by any change in routine	
16	10			Doesn't want to sleep alone	
13	11	10		Doesn't eat well	
11	12	11		Doesn't seem to feel guilty after misbehaving	
	13			Eats or drinks things that are not food (don't include sweets)	
8	14	13	1	Gets in many fights	
4	15	14		Gets into everything	
7	16	15	7	Gets too upset when separated from parents	
9	17	16		Hits others	
	18	24		Poorly coordinated or clumsy	
12	19		3	Punishment doesn't change his/her behavior	
2	20	18	5	Quickly shifts from one activity to another	
15	21	19		Resists going to bed at night	
	22	20		Stomach aches or cramps (without medical cause)	
	23			Sudden changes in moods or feelings	
19	24	21	8	Too fearful or anxious	
	25	23		Vomiting, throwing up (without medical cause)	
	26			Doesn't seem to be happy eating food (don't include sweets)	
		6	9	Cries a lot	
		12		Fears certain animals, situations, or places	
		17		Nervous, highstrung, or tense	
		27		Self-conscious or easily embarrassed	

The items (the items selected into the MoBa differ from questionnaire to questionnaire; see table above) were used in all versions of Q5, Q6, Q-5year, and Q-Cc.

Section No. in different versions of the questionnaires

Q5	5A:36	5B: 37	5C:37	5D:37	5E:37
Q6	6A:28	6B:28	6C:28	6D:28	
Q-5year	5year:40	5yearB:39			
Q-Cc	CcA:53	CcB:53			

2. Description of original instrument: **Child Behaviour CheckList (CBCL)**

The Child Behaviour Checklist (CBCL), developed by Thomas Achenbach initially in 1982, is designed to identify problem behaviour in children. There are two versions of the checklist: the preschool checklist (CBCL/1½-5) with 100 questions and the school-age version (CBCL/6-18) with 120 questions. The CBCL contains seven subscales in addition to a category of "other problems". These are: Emotionally reactive, anxious/depressed, somatic complaints, withdrawn, sleep problems, attention problems and aggressive behaviour. The first four categories comprise a broader grouping of internalizing symptoms; the last two scales externalizing problems.

Psychometric Information:

All sub-scales of CBCL (2-3 years) showed good test-retest reliability ($p < .001$; $r = .71 – .93$). Inter-parental agreement was significant ($p < .01$) at both ages ($r = .63$ at age 2; $r = .60$ at age 3). All stability coefficients were significant at $p < .001$ over a 1-year period. The CBCL has adequate sensitivity (71%) and specificity (92%) (Achenbach, 1992). The predicative validity has been demonstrated both in Danish and Norwegian samples (Bilenberg, 1999; Novik, 1999). Cronbach's alphas are .53, .79, .80, and .73 respectively for Q5, Q6, Q-5year, and Q-Cc.

Base References/Primary Citations:

Achenbach, T.M. (1992). *Manual for the Child Behaviour Checklist/2-3 and 1992 Profile. Burlington*. VT: University of Vermont Department of Psychiatry.

Bilenberg, N. (1999). The Child Behaviour Checklist (CBCL) and related material: standardization and validation in Danish population based and clinically based samples. *Acta Psychiatrica Scandinavica* 100: 2-52.

Novik, T. S. (1999). Validity of the Child Behaviour Checklist in a Norwegian sample. *European Child and Adolescent Psychiatry* 8: 247-254.

Modifications:

Subquestions 12 (English: Doesn't seem to feel guilty after misbehaving; Norwegian: Det merkes ikke på barnet når hun/han har gjort noe galt.) and 19 (English: Punishment doesn't change his/her behavior; Norwegian: Grensesetting endrer ikke barnets atferd.) were given a slightly different wording due to common attitudes in Norway, where punishing small children is not accepted.

In subquestion 3, "overactive" substituted for "hyperactive", because the latter is so heavily associated with ADHD.

3. Rationale for choosing the questions:

The CBCL is a widely used method of identifying problem behaviour in children.

4. Revision during the data collection period:

Some revisions were made in Q5. While there are only 7 items (namely, item 1, 6, 9, 10 11, 12, &16; cf. the table above) from the CBCL in version A, there are 10 additional items in the other versions of Q5.

Child Behaviour and Manner

1. Name of original questions: Child behaviour and manner

	To what extent you feel the statements are true of your child during the last two months?	Response options
1	Becomes distracted or diverted by outside stimuli (sounds or events)	1-Not true 2-Somewhat or sometimes true 3-Very true or often true
2	Finds it difficult waiting his/her turn	
3	Has problems keeping focused on tasks or activities	
4	Is excessively talkative	
5	Doesn't differentiate between adults; behaves the same way with all of them	
6	Will wander after other adults, even if they are strangers	
7	Doesn't seem to listen when he/she is being spoken to	
8	Has a habit of rolling his/her head around or making humming sounds	
9	Mood can vary greatly from day to day	
10	Is extremely passive, needs help to get going	

The questions were used in all versions of Q6.

Section No. in different versions of the questionnaire

Q6	6A:29.1-10	6B:29.1-10	6C:29.1-10	6D:29.1-10

2. **Description of original questions**: **Questions about child behaviour and manner**
   The questions are derived from the diagnostic criteria for different developmental disorders described in the Diagnostic Statistic Manual (APA, 1994). Mothers are asked to indicate whether the statements regarding their children's behaviour and manner are not true, somewhat or sometimes true, or very true or often true.

   Psychometric Information:
   The internal consistency for the 10 items is .61 in the MoBa Q6.

   Base References/Primary Citations:
   American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders (*4th edition). Washington, DC: American Psychiatric Association.

3. Rationale for choosing the questions:
These questions are meant to address issues on child behaviour and manner not covered elsewhere in Q6.

4. Revision during the data collection period:
No revisions have been made.

Infant-Toddler Social and Emotional Assessment (ITSEA)

1. Name of original questions: Infant-Toddler Social and Emotional Assessment (ITSEA)

	To what extent you feel the statements are true of your child during the last two months?	Response options
29.11	"Tests" other children to see whether they get angry	1-Not true 2-Somewhat or sometimes true 3-Very true or often true
29.12	Becomes aggressive when he/she is frustrated	
29.13	His/her body is affected by twitches or contortions that seem difficult to control (e.g. eyes, mouth, nose or legs)	
29.14	Hits, shoves, kicks and bites other children (not including siblings)	
29.15	Is very anxious about getting dirty	
29.16	Wants things to be clean and tidy	
29.17	Places toys or other objects in a certain order/sequence over and over again	
29.18	Wakes up in the night and needs help to get back to sleep	
29.19	Gets distressed when you go out and he/she is going to be looked after by family or a babysitter he/she knows	
29.21	Seems to have less fun than other children	
29.22	Is extremely noisy. Shouts and screams a lot	
29.23	Is disobedient or defiant (e.g. refuses to do anything you ask)	
29.28	Seems to be unhappy, sad or depressed	
29.29	Wakes up several times in the night	
20.6	Your child pays careful attention when you try to teach him/her something new	

The items were used in all versions of Q6.

Section No. in different versions of the questionnaire

Q6	6A:29.11-29 & 20.6	6B:29.11-29 & 20.6	6C:29.11-29 & 20.6	6D:29.11-29 & 20.6

2. Description of original questions: **Infant-Toddler Social and Emotional Assessment (ITSEA)**

The ITSEA (Carter, et al., 2003) assess four broad domains of behaviour (i.e. Externalizing, Internalizing, Dysregulation and Competencies). In addition, Maladaptive, Atypical Behaviour, and social relatedness indices are included to assess more serious problems, which tend to have low base rates of occurrence. The core components of the ITSEA (all scales excluding Atypical and Social Relatedness indices and the individual items of clinical significance) comprise 139 items. The complete ITSEA includes 166 items. Items are rated on the following 3-point scale: Not true, Somewhat/sometimes true, and Very true/often true. Only a subset of ITSEA items was selected into use for the MoBa. The items selected were based on which symptom clusters should be covered in the 36 months questionnaire. Primary selection of items was based on CBCL and only when appropriate items could not be found on the CBCL, items from ITSEA were selected.

Psychometric Information:

Test–retest reliability was evaluated in 93 families who completed the ITSEA within a 44-day time interval (M D 26:81, SD D 7:83). Test–retest coefficients for domains ranged from .82 to .90 and from .69 to .85 for scales. Information on inter rater agreement was available for 100 mother–father pairs. Agreement between mothers and fathers based on intraclass correlation coefficients (ICC) ranged from .58 to .79 for domains (Mean ICC D 0:71) and from .43 to .78 for scales (Mean ICC D 0:64) (Carter, et al., 2003).

Base References/Primary Citations:

Carter, A.S. et al. (2003). The Infant-Toddler Social and emotional Assessment (ITSEA): Factor Structure, Reliability, and Validity. *Journal of Abnormal Child Psychology 31 (5): 495-514.*

3. **Rationale for choosing the questions:**
   Items from ITSEA were selected due to their relevance for describing symptoms of behavioral and emotional difficulties in children as young as 36 months of age.

4. **Revision during the data collection period:**
   No revisions have been made.

Student-Teacher Relationship Scale-Short Form (STRS-SF)

1. Name of original scale: Student-Teacher Relationship Scale-Short Form (STRS-SF)

	To what extent are the following statements correct, regarding your relationship with this child?	Response options
1	I share an affectionate, warm relationship with this child	1- Not true at all 2- Not quite true 3- Neutral, not sure 4- Quite true 5- Very true
2	This child and I always seem to be struggling with each other	
3	If upset, this child will seek comfort from me	
*4	It seems as though the child doesn't like that I show positive feelings through physical contact, like a gentle touch or giving him/her a hug	
5	This child values his/her relationship with me	
6	When I praise this child, he/she beams with pride	
7	This child spontaneously shares information about himself/herself	
8	This child easily becomes angry with me	
9	It is easy to be in tune with what this child is feeling	
10	This child remains angry or is resistant after being disciplined	
11	Dealing with this child drains my energy	
12	When the child is in a bad mood, I know we're in for a long and difficult day	
13	This child's feelings toward me can be unpredictable or can change suddenly	
*14	This child often tricks me in order to get his/her way	
15	The child openly shares his/her feelings and experiences with me	

*The items were modified in MoBa due to inappropriate wording in the original scale.

The instrument was used in all versions of Q-CC.

Section No. in different versions of the questionnaire

Q-Cc	CcA:13	CcB:13

2. Description of original scale: Student-Teacher Relationship Scale-Short Form (STRS-SF)

The STRS-SF (Pianta, 1992) is a 15-item rating scale. Using a (five point) Likert-type format, it was designed to assess teachers' perceptions of their relationships with individual student. The STRS-SF consists of two subscales: Conflict and Closeness. The (seven) conflict items (e.g., items 2, 8, 10-14) are designed to attain information about perceived negativity within the relationship, whereas the (eight) closeness items (e.g., items 1, 3-7, 9, 15) ascertain the extent to which the relationship is characterized as warm, affectionate, and involving open communication.

Psychometric Information:
In terms of reliability, test–retest correlations over a four-week period were: closeness .88, conflict .92. Cronbach's alpha has been estimated be .92 for conflict and .86 for closeness. The STRS has also demonstrated predictive and concurrent validity (Pianta, 2001).

Base References/Primary Citations:
Pianta, R. C. (1992). *Student–Teacher Relationship Scale – Short Form.* University of Virginia.

Pianta, R. C. (2001). *Student–Teacher Relationship Scale: Professional Manual*. Odessa, FL: Psychological Assessment Resources.

Modifications:
Two items, namely items 4 & 14 were modified due to inappropriate (offensive) wording. A new translation of these items has been developed, with retained meaning. The translation (both Norwegian and back-translated English) has been sent to author Pianta, who has permitted the

new wording. Original English for item 4: ‘‘This child is uncomfortable with physical affection or touch from me’’, and for item 14: ‘‘This child is sneaky and manipulative with me.’’

3. **Rationale for choosing the instrument:**
   The STRS-SF has been used extensively in studies of preschool- and elementary-aged children, and is found to be related to current and future academic skills and disciplinary infractions (Hamre & Pianta, 2001), behavioural adjustment and peer relations (Birch & Ladd, 1998), and risk of retention (Pianta, Steinberg, & Rollins, 1995).

4. **Revision during the data collection period:**
   No revisions have been made.

Added references:

Birch, S.H., & Ladd, G. W. (1998). Children’s interpersonal behaviours and the teacher–child relationship. *Developmental psychology* 34: 934-946.

Hamre, B.K. and Pianta, R.C. (2001). Early Teacher–Child relationships and the trajectory of children’s school outcomes through eighth Grade. *Child Development* 72: (2), 625–638.

Pianta, R.C., Steinberg, M.S. & Rollins, K. (1995). The first two years of school: Teacher–child relationships and deflections in children’s classroom adjustment. *Development and Psychopathology* 7: 297-312.

Child Developmental Inventory (CDI) - *Expressive Language and Language Comprehension subscales*

1. **Name of original scale:** The Child Developmental Inventory (CDI) - Expressive Language and Language Comprehension subscales

	Assess the child based on Norwegian language competence	Response options
16.1	Asks the meaning of words	1- No 2- Yes
16.2	Talks in long, complex sentences, ten words or longer	
16.3	Uses plurals correctly, for example, says "men", not "mans", "mice", not "mouses"	
16.4	Names the days of the week in the correct order	
16.5	Tells where s/he lives, naming the town or city	
16.6	When asked, "What is a…?" talks about the group it belongs to, for example, "A horse?" "Is an animal." "An orange?" "Is a fruit."	
16.7	Knows right hand from left.	
16.8	Uses the words "today", "yesterday" and "tomorrow" correctly.	
16.9	Tells what a few objects are made of, such as a coat, or a chair.	
20.1	Retells short stories; tells what happens in correct order and how the story ends	

The instrument was used in all versions of Q-Cc.

Section No. in different versions of the questionnaire

Q-Cc	CcA:16.1-16.9	CcB: 16.1-16.9 &20.1

2. **Description of original scale: The Child Developmental Inventory (CDI)**
   The CDI is for the assessment of children 15 months to six years of age and for older children who are judged to be functioning in the one- to six-year range. It consists of 270 age-discriminating items which measure development in eight areas: Social, self-help, gross motor, fine motor, expressive language, language comprehension, letters, and numbers. It also includes a General Development Scale (Ireton, 1992). This section consists of 9 items (10 items in version B, cf. table above) from the Expressive Language and Language Comprehension subscales for 4-6 year olds. The first 4 items measure expressive language; the rest (including question 20 in version B) measure language comprehension. All answers are scored on a 2-point scale: 'yes' is a child possesses a skill, and 'no' if s/he does not.

   Psychometric Information:
   Classification analyses comparing parent-report CDI measures with direct assessment results (Reynell) revealed high sensitivity (88% and 77%) and good positive predictive value (80% and 75%) for the Expressive Language and Language Comprehension subscales, respectively. Specificity rates are low (45%) to moderate (64%) (Chaffee, et al., 1990).

   Base References/Primary Citations:
   Ireton H. (1992). *Child Development Inventory, Manual*. Minneapolis: Behaviour Science Systems.

   Chaffee, C.A., Cunningham, C.E., Secord-Gilbert, M., Elbard, H. & Richards, J. (1990). Screening effectiveness of the Minnesota Child Development Inventory expressive and receptive language scales: Sensitivity, specificity, and predictive value. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2(1): 80-85.

3. **Rationale for choosing the instrument:**
   The scale is a measure of children's expressive and receptive language competence.

4. **Revision during the data collection period:**
   The childcare questionnaire has 9 items in version A; 10 in version B (with the item about narrative skill added; see table above).

Child Development Inventory (CDI) - *Gross- and Fine Motor skills subscales*

1. **Name of original scale:** Child Development Inventory (CDI) – Gross- and Fine Motor skills subscales

	About motor skills. *Mark each item whether your child master the activities mentioned.*	**Response options**
1	1. Do you think your child walks, runs, and climbs like other children at the same age	1-No 2-Yes
2	2. Able to stand on one foot for at least 5 seconds without problems keeping balance *	
3	3. Hops, on one foot, many times, without support	
4	4. Plays "catch" with other children; throwing to him/her and catching the ball at least half the time	
5	5. Swings on a swing, pumping by self	
6	6. Rides a two-wheeled bike, with or without training wheels	
7	7. Puts together a puzzle with nine or more pieces	
8	8. Draws or copies a square with four good corners	
9	9. Cuts with scissors, following a simple outline or pattern	
10	10. Draws pictures of complete people that have at least head: with eyes, nose, mouth; body: arms and legs, hands and feet (need to do all seven for a yes)	
11	11. Colours within the lines in a colouring book	
12	12. Does your child like to participate in activities or active games requiring good motor skills?	

* The original item is phrased "stands on one foot for a few seconds without support"

The instrument was used in all versions of Q-5years.

Section No. in different versions of the questionnaire

Q-5year	5yearA:37	5yearB:36

2. **Description of original scale**: The CDI (1992) replaced the original Minnesota Child Development Inventory (1972), and was designed to obtain parent reported in-dept information about children's development from ages 15 months to 6 years. Originally, it contains 270 items divided into 9 subscales (Ireton, 1992). The fine and gross motor skills subscales consist of 30 items each. For this section, items from the fine motor skill subscale (items 7-11) and gross motor skills (items 2-6) were included. The parents' respond with 'yes' or 'no' to each statement, and scoring is done by counting 'yes'-responses. Item 1 and 12 are MoBa-specific questions, included to capture more variance.

   Psychometric Information: The gross- and fine motor skills subscales were correlated with age (.81 and .84 respectively), and mean scores increased with age from 1 year to 6 years, ensuring validity as these items are age dependent by design. Cronbach's alpha was .54 and .67 for gross- and fine motor skills respectively among children aged 5-6 years old. Gross- and fine motor skills were moderately correlated with each other between ages 1-5 years (range .39- .64) (Ireton & Glascoe, 1995) with a correlation of .55 at 5 years of age (Ireton, 1992).

   Base Reference/Primary Citation:
   Ireton H. (1992). *Child Development Inventory, Manual*. Minneapolis: Behaviour Science Systems.

   Ireton, H., & Glascoe, F. P. (1995). Assessing Children's Development Using Parents' Reports: The Child Development Inventory. *Clinical Pediatrics*, *34*(5), 248-255.

3. **Rationale for choosing the instrument:**
   CDI is a much used scale to collect information about fine and gross motor skills, and is included as motor skills often associate with other developmental difficulties.

4. **Revision during the data collection period:**
   No revisions have been made

Early Development Instrument (EDI)

1. Name of original questions: Selective items from The Early Development Instrument (EDI)

	The project child's interest in letters, numbers, reading and writing	Response options
	Reading skills	
1	Is able to read simple words	1- No 2- Yes
2	Is able to read simple sentences	
3	Is not interested in reading	
	Writing skills	
1	Is able to write simple words	1- No 2- Yes
2	Is able to write simple sentences	
3	Is not interested in writing	
	Numeric skills	
1	Is able to recognize numbers 1-10	1- No 2- Yes
2	Is able to add simple objects	
3	Is not interested in numbers	

The instrument was used in all versions of Q-Cc.

Section No. in different versions of the questionnaire

Q-Cc	CcA:17-19	CcB: 17-19

2. Description of original scale: The Early Development Instrument (EDI)

The EDI is a teacher-completed measure of children's school readiness at entry to Grade 1. The EDI covers all relevant development domains which are reflective of brain development: physical health and well-being, social competence, emotional maturity, language and cognitive development, communication skills and general knowledge domains **(**Janus & Offord, 2007). The items in this section were selected from the domain of Language and Cognitive Development, which covers cognitive aspects of language and numeracy. All answers are scored on a 2-point scale: 'yes' if a child possesses a skill, and 'no' if s/he does not.

Psychometric Information:

Internal consistency of the EDI scales ranged from .84 to .96. The inter-rater reliability correlations were moderate (.53) to high (.80). The test-retest correlations were also high (.82-.94). Parent-teacher agreements on the EDI were moderate (.36-.64). Concurrent test-criterion validity of the EDI, as explored in comparisons with direct language test and parent interview about children's behaviour demonstrated low to moderate, yet consistent relationships (Janus & Offord, 2007).

Base References/Primary Citations:

Janus, M. & Offord, D. (2007): Development and Psychometric Properties of the Early Development Instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioural Science* 39 (1):1-22.

3. Rationale for choosing the instrument:

The instrument measures school readiness, such as literacy and numeracy. Only selected items are used as a brief measure about knowledge about letters and numbers. Reading, writing and math are not emphasized as goals of teaching in Norwegian child care.

4. Revision during the data collection period:

No revisions have been made.

Environment Rating Scales-Revised (ECERS-R)

1. **Name of original scale**: The Environment Rating Scales-Revised (ECERS-R)

	How often do you facilitate for a structural pedagogical program for the children in the following areas?	Response options
1	Scribbling	1) Daily 2) 3-4 times per week 3) 1-2 times per week 4) Every second week 5) Once a month or less
2	Exploring letters (in the nature, books, milk cartoons)	
3	Practice word pictures (e.g. note with “fridge” on the fridge)	
4	Writing whole words	
5	Explore geometry, shapes, patterns or other mathematical concepts	
6	Understanding numbers	
7	Sensory-motor and physical play	
8	Culture and distinctiveness	
9	Creative activities (paint, draw, woodwork etc.)	
10	Outdoor activities focusing on environmental knowledge	
11	Playgroups focusing on role play (e.g. play shop, hospital, cafe etc.)	
12	Computers (pedagogical games, search for pictures etc.)	

The instrument was used in all versions of Q-Cc.

Section No. in different versions of the questionnaire

Q-Cc	CcA:32	CcB: 32

2. **Description of original scale: The Environment Rating Scales-Revised (ECERS-R)**
   The Environment Rating Scales-Revised (Harms, Clifford & Cryer, 1998) were developed to evaluate the various dimensions of quality in settings for children. The total scale with 43 items contains seven subscales assessing the physical environment, personal care routines, language-reasoning, activities, interactions, program structure, and parent and staff needs. The items in this section were selected from the subscale of Program Structure. All answers are scored on a 5-point Likert scale: ‘1-daily’ to ‘5-once a month or less’.

   Psychometric Information:
   The ECERS-R is reliable at the indicator and item level, and at the levels of the total scores. Percentage level of agreement across the full 470 indicators in the scale was 86.1%, with no item having an indicator agreement level below 70%. Exact agreement at the item level was 48%. The inter-rater reliability (weighted kappa) agreements between two independent raters were .92 product moment correlation (Pearson) and .87 rank order (Spearman). The interclass correlation was .92 (Harms, Clifford & Cryer, 1998).

   Base References/Primary Citations:
   Harms, T., Clifford, R. M., & Cryer, D. (1998). *Early Childhood Environment Rating Scale* (revised edition). New York: Teachers College Press.

3. **Rationale for choosing the instrument:**
   These items constitute a measure of *process quality* of the child care centre.

4. **Revision during the data collection period:**
   No revisions have been made.

Conners Parent Rating Scale-Revised, Short Form (CPRS-R (S))

1. **Name of original scale:** Selective questions from the Conners Parent Rating Scale - Revised, Short Form (CPRS-R (S))

In Q-Cc	In Q-5year	How much of a problem has this been in the last 6 month?	Response options
1	1	Inattentive, easily distracted	1- Not true/ never/ Seldom 2- Somewhat true/ sometimes 3- Quite often 4- Very often
	2	Short attention span	
2	3	Fidgets with hands or feet, squirms in seat	
3	4	Messy or disorganised at home or in the kindergarten	
	5	Only attends if it is something he/she is very interested in	
4	6	Distractibility or attention span a problem	
	7	Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as activities in kindergarten or helping out at home)	
5	8	Gets distracted when given instructions to do something	
	9	Has trouble concentrating in kindergarten	
	10	Leaves seat in kindergarten or in other situations in which remaining seated is expected	
6	11	Does not follow through on instructions and fails to finish tasks such as putting away shoes/tidying toys (not due to oppositional behaviour or failure to understand instructions)	
7	12	Easily frustrated in efforts	

Selective questions from the CPRS-R (S) were used in all versions of Q-5year and Q-Cc.

Section No. in different versions of the questionnaire

Q-5year	5yearA:36	5yearB:35
Q-Cc	CcA:54	CcB: 54

2. **Description of original scale: The Conners Parent Rating Scale-Revised: Short Form (CPRS-R (S))**

The CPRS-R (Conners, et al., 1998) assesses behaviours and other concerns in children from age 3-17. The short version with 27 items provides evaluation of the key areas of inattention, hyperactivity/impulsivity, learning problems, executive functioning, aggression, and peer relations. Responses are scored on a 4-point Likert scale ranging from 'not true/never/seldom' to 'very often'. The items in Q-5year and Q-Cc were selected from the areas of inattention and hyperactivity/impulsivity.

Psychometric Information:

An exploratory principal-axis factor analysis with all 27 item ratings found 2 dimensions: One dimension was composed of the 6 items in the Oppositional scale, and other dimension contained the remaining 21 items. An attention deficit hyperactivity disorder (ADHD) Total Symptoms scale was constructed by summing the ratings for these 21 symptom ratings, and this scale was found to be as effective as the Hyperactivity scale was in discriminating between youth who were and were not eventually diagnosed with an ADHD (Kumar & Steer, 2003).

Base References/Primary Citations:

Conners CK, Sitarenios G, Parker JD, & Epstein JN. 1998. The revised Conners' Parent Rating Scale (CPRS-R): factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology* 26(4):257-68.

Kumar, G. & Steer, R. A. 2003. Factorial Validity of the Conners' Parent Rating Scale-Revised: Short Form with Psychiatric Outpatients. *Journal of Personality Assessment* 80(3): 252–259.

Modifications:
The 12-item scale as used in Q-5year has been shortened to 7 items in Q-Cc due to limited space in the questionnaire. This was done by a data driven process using confirmatory factor analysis in Mplus. Modification indices, factor loadings and explained variance for the items were used to select the items to be and kept in the model. Pearson correlation between the full scale and the short scale is r=.966; standardized coefficients beta=.513.

3. **Rationale for choosing the instrument:**
   The Conners Parent Rating Scale (CPRS) is a popular research and clinical tool for obtaining parental reports of childhood behaviour problems.

4. **Revision during the data collection period:**
   No revisions have been made.

Preschool Play Behaviour Scale (PPBS)

1. Name of original scale: Selective questions from The Preschool Play Behaviour Scale (PPBS)

In Q-Cc	In Q-5year	Please indicate how common the following statements are for this child.	Response options
1	1	Talks to other children during play (S)*	
	2	Plays by himself/herself, examining a toy or object (SP)	
	3	Plays 'rough-and tumble' with other children(RP)	
2	4	Takes on the role of onlooker or spectator (R)	
3	5	Plays 'make-believe' with other children (S)	
4	6	Engages in group play (S)	
5	7	Engages in pretend play by himself/herself(SA)	1- Never
	8	Plays alone, building things with blocks and /or other toys(SP)	
	9	Wanders around aimlessly(R)	2- Hardly ever
6	10	Plays in groups with (and not just beside) other children(S)	
7	11	Plays 'make-believe', but not with other children(SA)	3- Sometimes
8	12	Watches or listens to other children without trying to join in (R)	
	13	Engages in playful/mock fighting with other children(RP)	4- Often
9	14	Plays by himself/herself, drawing, painting pictures, or doing puzzles(SP)	
10	15	Engages in active conversations with other children during play(S)	5- Very often
11	16	Engages in pretend play with other children(S)	
	17	Plays alone, exploring toys or objects, trying to figure out how they work(SP)	
	18	Remains alone and unoccupied, perhaps staring off into space(R)	
	19	Plays by him/herself, engaging in simple motor activities (e.g. running) (SA)	
	20	Plays just for a short while with each toy, does not settle with any toy(SA)	

*The subscale an item belongs to is put in brackets. R=Reticent behaviour; SP=Solitary-passive behaviour; SA=Solitary-active behaviour; RP=Rough-play; S=Social play.

The full scale with 20 items was used in B version of Q-5year; Selective questions from the PPBS were used in both versions of Q-Cc.

Section No. in different versions of the questionnaire

Q-5year	5yearA:N/A	5yearB:34
Q-Cc	CcA:55	CcB: 55

2. Description of original scale: **The Preschool Play Behaviour Scale (PPBS)**

The PPBS (Coplan & Rubin, 1998) measures pre-schoolers' non-social and social play behaviour. The total scale with 20 items contains five subscales: 1) Reticent behaviour (4 items), 2) Solitary-passive behaviour (4 items), 3) Solitary-active behaviour (4 items), 4) Social play (6 items), and 5) Rough-play (2 items). The response categories are designed to reflect frequency of occurrence (1=Never, 5=Very often). The full scale with 20 items was used in Q-5year. The 11 items in Q-Cc were selected from the subscales of Social play (6 items), Solitary-active behaviour (2 items), Reticent behaviour (2 items), and Solitary-active behaviour (1 item).

Psychometric Information:

The PPBS subscale Social play had relatively high reliability correlations, ranging from $r = .54$ ($p<.05$) to $r = .89$ ($p< .001$). Solitary-active behaviour was less consistently reliable, with a wide range of reliability correlations from $r = .10$ (n.s.) to $r = .83$ ($p< .01$). The stability over time has been found to be moderate to high: Social play, $r = .65$, $r = .66$; Solitary-active, $r = .50$ (all p's $< .05$), $r = .17$ (n.s.) (Coplan & Rubin, 1998). Alpha reliability for the selective items in Q-Cc was .78.

Primary citation/ base reference:
Coplan, R. J. & Rubin, K. H. (1998). Exploring and assessing non-social play in the preschool: The development and validation of the preschool play behaviour scale. *Social Development* 7 (1): 72-91.

Modifications
One item in the original scale: Plays alone in an active fashion, enjoying an activity solely for the physical sensation it creates was modified in MoBa into: Plays just for a short while with each toy, does not settle with any toy.

3. **Rationale for choosing the instrument:**
   This scale has been chosen to measure children's play behaviour.

4. **Revision during the data collection period:**
   The selective items were not included in version A of Q-5year. No further revisions have been made.

Parent/Teacher Rating Scale for Disruptive Behaviour Disorders (RS-DBD)

1. Name of original scale: Parent/Teacher Rating Scale for Disruptive Behaviour Disorders (RS-DBD)

Section 12	**Mark the box that best describes your child's behaviour during the last 12 months/last year**	**Response options**
1	Bullies, threatens or intimidates others	1-Never/rarely 2-Sometimes 3-Often 4-Very often
2	Initiates physical fights	
3	Has been physically cruel to others	
4	Has harassed or injured animals physically	
5	Has stolen items of nontrivial value without confronting a victim (e.g. shoplifting)	
6	Has deliberately destroyed other's property	
7	Has been truant from school	
8	Has used an object that can cause serious physical harm to others (e.g. a bat, stone, knife, heavy toy)	
Section 13	**Mark the box that best describes your child's behaviour over the past 6 months**	**Response options**
1	Fails to give close attention to details or makes careless mistakes in schoolwork	1-Never/rarely 2-Sometimes 3-Often 4-Very often
2	Has difficulty sustaining attention in tasks or play activities	
3	Does not seem to listen when spoken to directly	
4	Does not follow through on instructions and fails to finish school work, chores or duties (not due to oppositional behaviour or failure to understand instructions)	
5	Has difficulty organizing tasks and activities	
6	Avoids, dislikes or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)	
7	Loses things necessary for tasks or activities (pencils, books, toys)	
8	Is easily distracted	
9	Is forgetful in daily activities	
10	Fidgets with hands or feet or squirms in seat (sits uneasily)	
11	Leaves seat in classroom or in other situations in which remaining seated is expected (e.g. at the table or in group gathering)	
12	Runs about or climbs excessively in situations in which it is inappropriate	
13	Has difficulty playing or engaging in leisure activities quietly	
14	Is "on the go" or acts as if "driven by a motor"	
15	Talks excessively	
16	Blurts out answers before questions have been completed	
17	Has difficulty awaiting turn	
18	Interrupts or intrudes on others, such as in conversation or play	
19	Loses temper (tantrums)	
20	Argues with adults	
21	Actively defies or refuses to comply with adults' requests or rules	
22	Deliberately annoys people	
23	Blames others for his/her mistakes or misbehaviour	
24	Is touchy or easily annoyed by others	
25	Is angry and resentful	
26	Is spiteful or vindictive	

The questions were used in all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-8year	8yearA:12-13	8yearB:12-13	8yearC:12-13

2. **Description of original scale**: **Parent/Teacher Rating Scale for Disruptive Behaviour Disorders (RS-DBD)**

   Parent/Teacher Rating Scale for Disruptive Behavior Disorders (RS-DBD; Silva et al., 2005) consists of 41 DSM-IV items; with 18 items related to ADHD, 8 items related to Oppositional Defiant (OD), and 15 items to Conduct Disorder (CD). The 18 items (items 1-18 of section 13) related to ADHD, the 8 items related to OD (items 19-26 of section 13), and 8 items to CD were

selected into use in Q-8year. Each item is rated on a four-point scale (1 = never/rarely, 2 = sometimes, 3 = often, 4 = very often*)*.

Psychometric Information:
There was a significant correlation between parent and teacher ratings for each of the three subscales (ADHD, OD and CD), ADHD: r=.33, OD: r=.34, CD: r=.61. The alphas ranged from .78 to .96. The RS-DBD shows construct and instrument validity when compared to the relevant factors of the parent and teachers Conners' scale (Silva et al., 2005).

Base References/Primary Citations:
Silva RR, Alpert M, Pouget E, Silva V, Trosper S, Reyes K, & Dummit S. (2005). A rating scale for disruptive behaviour disorders, based on the DSM-IV item pool. *Psychiatric Quarterly 76:* 327-339.

Modifications
Some questions (e.g. 'has forced someone into sexual activity', 'has deliberately engaged in fire setting with the intention of causing serious damage') which are not age-appropriate were removed.

3. Rationale for choosing the instrument:
The RS-DBD is one of the few rating scales that is keyed from the DSM and evaluates for all three DBDs.

4. Revision during the data collection period:
No revisions have been made.

Short Mood and Feelings Questionnaire (SMFQ)

1. Name of original scale: Short Mood and Feelings Questionnaire (SMFQ)

	Mark how true each item has been for your child during the two last weeks.	**Response options**
1	Felt miserable or unhappy	1-Not true 2- Sometimes true 3-True
2	Felt so tired that s/he just sat around and did nothing	
3	Was very restless	
4	Didn't enjoy anything at all	
5	Felt s/he was no good anymore	
6	Cried a lot	
7	Hated him/herself	
8	Thought s/he could never be as good as other kids	
9	Felt lonely	
10	Thought nobody really loved him/her	
11	Felt s/he was a bad person	
12	Felt s/he did everything wrong	
13	Found it hard to think/concentrate	

The questions were used in all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-8year	8yearA:10	8yearB:10	8yearC:10

2. Description of original scale: **Short Mood and Feelings Questionnaire (SMFQ)**

The Mood and Feelings Questionnaire (MFQ; Angold & Costello, 1987) is a 32-item questionnaire based on DSM-III-R criteria for depression. The MFQ consists of a series of descriptive phrases regarding how the subject has been feeling or acting recently. A 13-item short form was developed, based on the discriminating ability between the depressed and non-depressed (Angold, et al., 1995). Both parent and child-report forms are available. The parent version is used in the MoBa 8-year questionnaire.

Psychometric Information:

The internal reliability coefficient for the parent version of is .87. The parent-version of SMFQ was found to be a better predictor of depression than was the child self-report of this measure (Angold, et al., 1995). Its scaling properties as a potential dimensional measure of symptom severity of childhood depression was confirmed in community samples (Sharp, et al., 2006).

Base References/Primary Citations:

Angold A, & Costello EJ. (1987). *Mood and Feelings Questionnaire* (MFQ). Durham Duke University Developmental Epidemiology Program.

Angold, A., Costello, E. J., Messer, S. C., & Pickles, A., Winder, F., & Silver, D. (1995). The development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research* 5: 237 - 249.

Sharp, C., Goodyer, IM., & Croudace, TJ. (2006). The short mood and feelings questionnaire (SMFQ): A unidimensional item response theory and categorical data factor analysis of self-report ratings from a community sample of 7-through 11-year old children. *Journal of abnormal child psychology* 34 (3): 379-391.

3. **Rationale for choosing the instrument:**
   The SMFQ is a brief, easy-to-administer measure of childhood and adolescent depression, designed for the rapid evaluation of core depressive symptomatology or for use in epidemiological studies.

4. **Revision during the data collection period:**
   No revisions have been made.

Screen for Child Anxiety Related Disorders (SCARED)

1. Name of original scale: Screen for Child Anxiety Related Disorders (SCARED)

	The questions below are about how your child have felt or behaved recently	Response options
1	My child gets really frightened for no reason at all	1-Not true 2- Sometimes true 3-True
2	My child is afraid to be alone in the house	
3	People tell my child that he/she worries too much	
4	My child is scared to go to school	
5	My child is shy	

The items were used in all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-8year	8yearA:14	8yearB:14	8yearC:14

2. Description of original scale: **Screen for Child Anxiety Related Disorders (SCARED)**

The SCARED (Birmaher et al., 1997) is a multidimensional questionnaire that purports to measure DSM-defined anxiety symptom. It contains 41 items which can be allocated to five separate anxiety subscales. Four of these subscales represent anxiety disorders that correspond with DSM categories, namely panic disorder, generalized anxiety disorder, social phobia, and separation anxiety. The fifth subscale is school phobia. The SCARED comes in two versions: a parent version and a child version. The 5-item short version, as used in the MoBa, was developed in Birmaher et al. (1999). Mothers rate how true the statements describe their children using a 3-point scale (i.e. 1= Not true, 2=Sometimes true, 3=True).

Psychometric Information:

The SCARED has good internal consistency, assessed by means of Cronbach's Alpha (.70-.90), as well as good test–retest reliability (p=0.6-0.9). It has shown good discriminant validity, differentiating between youths with and without anxiety disorders, and good the convergent validity. The 5-item version of the SCARED showed similar psychometrics to the full scale (Birmaher et al., 1999).

Base References/Primary Citations:

Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999) Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): A replication study. *Journal of the American Academy of Child and Adolescent Psychiatry* 38(10): 1230–1236.

Birmaher, B., Khetarpal, S., Brent, D., Cully, M., Balach, L., Kaufman, J., et al. (1997). The Screen for Child Anxiety Related Emotional Disorders (SCARED): Scale construction and psychometric characteristics. *Journal of the American Academy of Child and Adolescent Psychiatry* 36: 545–553.

3. Rationale for choosing the instrument:

The 5-item SCARED is a valid screening instrument to rate anxiety symptoms of children and adolescents.

4. Revision during the data collection period:

No revisions have been made.

Short Norwegian Hierarchical Personality Inventory for Children (NHiPIC-30)

1. **Name of original scale:** Short Norwegian Hierarchical Inventory for the Assessment of Personality in Children (NHiPIC-30)

Version B&C	Think back over the last year. How well do these statements apply to your child's behavior over the past year?	Response options
1	Is easily caught up in problems **(*)**	1-Not typical 2- Not very typical 3-Quite typical 4-Typical 5-Very typical
2	Has a broad range of interests	
3	Makes an all-out effort	
4	Obeys without protests	
5	Takes himself/herself into consideration first	
6	Is quick to worry about things	
7	Forgets anything and everything	
8	Is constantly on the move	
9	Prefers to leave work to others	
10	Talks to people easily	
11	Does everything to get his/her own way	
12	Derives pleasure from creating things	
13	Is not very thorough**(*)**	
14	Doubt himself/herself	
15	Finishes tasks to the very end	
16	Imposes her or his will	
17	Is readily discouraged by imminent failure	
18	Is chatty **(*)**	
19	Enjoys life	
20	Is quick to understands things	
21	Is easily incensed by things	
22	Is quick to doubt his/her own capacities	
23	Has an infectious laugh **(*)**	
24	Has a rich imagination	
25	Talks about own feelings	
26	Carries out work to the last detail	
27	Has confidence in own abilities	
28	Doesn't envy others **(*)**	
29	Is interested in all that is new (is interested in anything)	
30	Can express himself/herself well	

*Some modifications have been made in wording of the items marked with (*)

In version A, the five items below differ from those in versions B & C

	Think back over the last year. How well do these statements apply to your child's behavior over the past year?	Response options
1	Become easily panic	1-Not typical 2- Not very typical 3-Quite typical 4-Typical 5-Very typical
2	Will get to the bottom of things	
8	Have energy to spare	
10	Seeking contact with new classmates	
27	Feel at ease with him/herself	

The instrument was used in all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-8year	8yearA:11	8yearB:11	8yearC:11

2. **Description of original scale: The Hierarchical Personality Inventory for Children (HiPIC)**

The HiPIC (Mervielde & De Fruyt, 1999, Mervielde & De Fruyt, 2002) is a questionnaire measuring the Big Five personality factors in children and adolescents. By means of 144 items, the HiPIC assesses five broad personality traits: Extraversion, Benevolence, Neuroticism,

Conscientiousness, and Imagination. Each HiPIC item refers to a specific overt behaviour and is formulated in the third-person singular. Items are rated on a five-point Likert scale ranging from 'not typical' (1) to very typical (5). This section used the 30-item short form, also referred to as NHiPIC-30 (Vollrath, Hampson and Torgersen, submitted 2013). It contains five domain scales with 6 items each: Extraversion (items 8, 10, 18, 19, 23, 25), Benevolence (items 4, 5, 11, 16, 21, 28), Conscientiousness (items 3, 7, 9, 13, 15, 26), Neuroticism (items 1, 6, 14, 17, 22, 27), Imagination (2, 12, 20, 24, 29, 30). Both the full and the short scale have been validated in Norwegian samples.

Psychometric Information:

For the Norwegian translation of the HiPIC full scale (NHiPIC), Cronbach's alphas for the broad trait scales were .90 for extraversion, .98 for benevolence, .87 for conscientiousness, .86 for neuroticism, and .86 for imagination (Vollratha, et al. 2012). The NHiPIC reproduced five reliable and valid factors with excellent correspondence to the original measure, a hierarchical structure similar to that found for other Big Five assessment instruments for children and meaningful correlations with scales of the CBCL. The short form (NHiPIC-30) correlated .90 with its longer counterpart (Vollrath, Hampson and Torgersen, submitted 2013).

Base References/Primary Citations:

Mervielde, I., & De Fruyt, F. (1999). Construction of the hierarchical personality inventory for children (HiPIC). In I. J. Deary, F. De Fruyt & F. Ostendorf (Eds.), *Personality Psychology in Europe* (Vol. 7, pp. 107-127). Tilburg: Tilburg University Press.

Mervielde, I., & De Fruyt, F. (2002). Assessing children's traits with the hierarchial personality inventory for children. In B. De Raad & M. Perugini (Eds.), *Big five assessment* (pp. 129-142). Ashland, OH, US: Hogrefe & Huber.

Vollratha ME, Hampsonc SE, & Júlíussond, PB. (2012). Children and eating. Personality and gender are associated with obesogenic food consumption and overweight in 6- to 12-year-olds. *Appetite* 58: 1113 -1117.

Vollrath, M., Hampson, S., & Torgersen, S. (submitted November 2013). A Norwegian Long and Short Form of the Hierarchical Personality Inventory for Children: The NH*i*PIC and the NH*i*PIC-30. *Sage Open*.

Modifications:

The following five items (marked with a * in the table above) deviate from the original NH*i*PIC-30.

Items used in MoBa	Original NHiPIC
1. Is easily caught up in problems **(*)**	Is easily depressed
13. Is not very thorough **(*)**	Plays fast and loose
18. Is chatty **(*)**	Talks the whole day long
23. Has an infectious laugh **(*)**	Can make companions laugh
28. Doesn't envy others **(*)**	Grants also something to others

3. Rationale for choosing the questions:

The NH*i*PIC-30 is a reliable and valid measure of Norwegian children's Big Five personality domains (Vollrath, Hampson and Torgersen, submitted 2013).

4. Revision during the data collection period:

Five items were exchanged from version A to B & C (see tables above) after examining their item-total correlations (Personal communication with Margarete Vollrath, Sept. 2014)

School Readiness Questionnaire (SRQ)

1. **Name of original scale/ questions:** The School Readiness Questionnaire (SRQ)

	How do you find the child is coping in the following areas?	
1	Settling into the child care centre	1- Very well 2- Well 3- Average 4- Some difficulty 5- Considerable difficulty
2	Co-operation with other children	
3	Relationship with teacher	
4	Concentration	
5	Use of play materials	
6	Confidence	
7	Speak in groups of children	
8	Follow instructions	
9	Personal needs	
10	Motor coordination	
11	Agreeableness	
12	Fine motor skills	
13	Adaptation to child care centre	

The instrument was used in all versions of Q-Cc.

Section No. in different versions of the questionnaire

Q-Cc	Q-CcA:12	Q-CcB:12

2. **Description of original scale: School Readiness Questionnaire (SRQ)**
   The SRQ is a 13-item scale for teachers to rate via five-point Likert scales, with responses ranging from 'coping very well' to having 'considerable difficulty'. Items cover: Personal social variables, including cooperation with other children, relationship with teacher, coping with personal needs and sociability; cognitive variables, including concentration, use of materials, verbalizing in class work, following instructions, plus fine motor and physical coordination as a single index of physical maturity. The final item is an overall rating of the child's readiness for school (Prior et al., 2000).

   Psychometric Information:
   The unidimensionality of the SRQ scale was confirmed in a factor analysis (Principal axes with Promax rotation) on the 13 items, which produced only one factor with an eigenvalue above unity, accounting for 62% of the variance. The internal consistency of the scale was .95 (Prior et al., 2011).

   Base References/Primary Citations:
   Prior, M., Bavin E. & Ong, B. (2011). Predictors of school readiness in five- to six-year-old children from an Australian longitudinal community sample. *Educational Psychology* 31(1): 3-16.

   Prior, M., Sanson, A., Smart, D., & Oberklaid, F. (2000). *Pathways from infancy to adolescence: Australian Temperament Project 1983–2000.* Melbourne: Australian Institute of Family studies.

3. **Rationale for choosing the instrument:**
   The SRQ was proved to be a predictor of a range of developmental outcomes in both boys and girls across the years from 5 to 12 years of age (Prior et al., 2000).

4. **Revision during the data collection period:**
   No revisions have been made.

Alabama Parenting Questionnaire (APQ)

1. Name of original scale: Selective items from the Alabama Parenting Questionnaire (APQ)

Selected items in Q-5yearB	How often does this happen in your home?	Response options
1	You let your child know when he/she is doing a good job with something	1-Never 2-Almost never 3-Sometimes 4-Often 5-Always
2	You threaten to punish your child and then do not actually punish him/her	
*3	You have a friendly talk with your child	
4	Your child talks him/herself out of being punished after he/she has done something wrong	
*5	You ask your child about his/her day in childcare	
6	You compliment your child when he/she has done something well	
7	You praise your child if he/she behaves well	
*8	You talk to your child about his/her friends	
9	You let your child out of a punishment early (E.g. Lift restrictions earlier than you originally said)	

Selected items in Q-8year	Below are a number of statements about your family. The statements may not describe how you are in your family. Nonetheless, please rate each item according to how often it typically occurs in your home	Response options
1	You let your child know when he/she is doing a good job with something	1-Never 2-Almost never 3-Sometimes 4-Often 5-Always
2	You threaten to punish your child and then do not actually punish him/her	
*3	Your child fails to leave a note or let you know where he/she is going	
4	Your child talks you out of being punished after he/she has done something wrong	
*5	Your child stays out in the evening after the time he/she is supposed to be home	
6	You compliment your child when he/she has done something well	
7	You praise your child if he/she behaves well	
*8	Your child is out with friends you don't know	
9	You let your child out of a punishment early (E.g. Lift restrictions earlier than you originally said)	

The items marked with * are different in the two questionnaires.

The questions were used in version B of Q-5year and all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:N/A	5yearB:53	
Q-8year	8yearA:55	8yearB:55	8yearC:55

2. Description of original instrument: Alabama Parenting Questionnaire (APQ)

The APQ is a 42-item scale developed by Frick (1991) to assess parenting practices in clinical and research settings. The APQ measures five dimensions of parenting that are relevant to the etiology and treatment of child externalizing problems: (1) Positive Involvement with children, (2) Supervision and Monitoring, (3) Use of Positive Discipline Techniques, (4) Consistency in the Use of Such Discipline and (5) Corporal Punishment. There are both a parent form and a child from. The 9 items from the parent form are selected into use in MoBa. The 9 items that are selected into use in Q-8year constitute the short form of the APQ (APQ-9; Elgar et al., 2006), with three supported factors: Positive Parenting, Inconsistent Discipline, and Poor Supervision. In Q-5year, six items (1, 3, 5, 6, 7, 8) are from the subscale Positive Involvement with children; three items (2, 4, 9) are from the subscale Consistency in the Use of Such Discipline. All answers are scored on a 5-point scale from 'never' (1) to 'always' (5).

Psychometric Information:

The average reliability across the APQ scales is .68. The APQ has good psychometric properties including criterion validity in differentiating clinical and nonclinical groups (Dadds, Maujean, & Fraser, 2003; Frick et al., 1999; Shelton et al., 1996). Frick et al. (1999) reported a mean R^2 across its

five scales of .24 for predicting child symptoms of oppositional defiant disorder and conduct disorder. The 9-item short scale showed good fit to a three-factor model and good convergent validity by differentiating parents of children with disruptive behavioral disorders and parents of children without such disorders. Internal consistency of the short scale is .44; the mean correlation between the APQ and the short scale is r=.85 (Elgar et al., 2006).

Base References/Primary Citations:

Frick, P. J. (1991). *Alabama Parenting Questionnaire*. University of Alabama.

Frick, P. J., Christian, R. E.,& Wooton, J. M. (1999). Age trends in the association between parenting practices and conduct problems. *Behavior Modification* 23: 106–128.

Elgar, F.J., Waschbusch, D.A, Dadds, M.R., & Sigvaldason, N. (2006). Development and validation of a Short Form of the Alabama Parenting Questionnaire. *Journal of Child Family Study* 16: 243-259.

Shelton, K. K., Frick, P. J., &Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology 25:* 317–329.

Modifications:

The 9-item short scale, with 3 items from each of these factors (Positive Parenting, Inconsistent Discipline, and Poor Supervision), was used in Q-8year; in Q-5year three items from the Poor Supervision were not included. They were replaced by three items from the original APQ subscale Positive Involvement with Children (see table above).

3. Rationale for choosing the questions:

The APQ is useful for studying how parenting practices influence children's social and psychological development.

4. Revision during the data collection period:

The section about parenting style in Q-5year includes items selected from different scales. Selective items from the APQ were used in version B, whereas selective items from the Parental Authority Questionnaire-Revised (PAQ-R; see the next page for description) were used in version A. The change was made because the items in version B contain the dimension of positive parenting (warmth), which is considered as an important part of parenting practice.

Parental Authority Questionnaire-Revised (PAQ-R)

1. Name of original scale: Parental Authority Questionnaire-Revised (PAQ-R)

	Do you agree or disagree with the following questions?	Response options
1	I expect my children to do what they are told immediately without questions	1- Agree totally 2- Agree 3- Neither agree or disagree 4- Disagree 5- Disagree totally
2	Other parents should use more force to get their children to behave properly	
3	Smart parents should early teach their children who is the boss in the family	
4	Most of the problems could be solved if parents would let their children choose their own activities, make their own decisions and follow their own dreams when they grow up.	
5	I let my children decide most of the things by their own, without much help from me	
6	I don't control the behaviour, the activities or wishes of my children	

The questions were used in version A of Q-5year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:50	5yearB:N/A

2. Description of original instrument: The Parental Authority Questionnaire-Revised (PAQ-R)

The Parent Authority Questionnaire (PAQ) is developed by Buri (1991) to assess parenting style based on retrospective adolescent ratings. The 30-item instrument consisted of three 10-item scales representing permissive, authoritarian, and authoritative parenting styles. The PAQ was modified for parent report and altered to improve readability by Reitman et al. (PAQ-R; 2002). The first 3 items are selected from the PAQ-R's Authoritarian subscale; the remaining 3 items from its Permissive subscale. All answers are scored on a 5-point scale from 'agree totally' (1) to 'disagree totally' (5).

Psychometric Information:

The internal consistency of the PAQ-R subscales ranged from .56 to .77. The PAQ-R subscales correlated with relevant subscales of the Parenting Scale and the Parent-Child Relationship Inventory (Reitman et al., 2002). The full PAQ-R scale and the short version show good psychometric properties. Confirmatory factor analyses provide evidence for an Authoritarian subscale with internal reliability of .70, Permissive subscale with internal reliability of .85.

Base References/Primary Citations:

Buri, J.R. (1991). Parental authority questionnaire. *Journal of Personality Assessment* 57: 110-119.

Reitman, D, Rhode, PC. Hupp, S & Altobello, C. (2002). Development and Validation of the Parental Authority Questionnaire-Revised. *Journal of Psychopathology and Behavioral Assessment* 24(2): 119-127.

3. Rationale for choosing the questions:

The instrument is useful for studying how parenting practices influence children's social and psychological development.

4. Revision during the data collection period:

The section about parenting style in Q-5year includes items selected from different scales. Selective items from the Alabama Parenting Questionnaire (see the previous page for description) were used in version B, whereas selective items from the Parental Authority Questionnaire-Revised were used in version A. The change was made because the items in version B contain the dimension of positive parenting (warmth), which is considered as an important part of parenting practice.

Child Feeding Questionnaire (CFQ)

1. Name of original questions: The Child Feeding Questionnaire (CFQ)

	About your child's eating habits and appetite and your attitude to it.	Response options
1	I have to be sure that my child does not eat too many sweets (candy, ice cream, cake or pastries)	1-Totally disagree 2-Slightly disagree 3-Neither/nor 4-Slightly agree 5-Totally agree
2	I have to be sure that my child does not eat too many high-fat foods	
3	I have to be sure that my child does not eat too much of his/her favorite food	
4	I intentionally keep some foods out of my child's reach	
5	I offer sweets (candy, ice cream, cake, pastries) to my child as a reward for good behavior	
6	I offer my child his/her favorite foods in exchange for good behavior	
7	If I did not guide or regulate my child's eating, he/she would eat too many junk foods	
8	If I did not guide or regulate my child's eating, he/she would eat too much of his/her favorite foods	
9	My child should always eat all of the food on his/her plate	
10	I have to be especially careful to make sure that my child eats enough	
11	If my child says: "I'm not hungry", I try to get him/her to eat anyway	
12	If I did not guide or regulate my child's eating, he/she would eat much less than he/she should	

The items were used in all versions of Q6.

Section No. in different versions of the questionnaire

Q6	6A:30	6B:30	6C:30	6D:30

2. **Description of original Instrument**: **The Child Feeding Questionnaire (CFQ)**
The Child Feeding Questionnaire (CFQ; Birch, et al., 2001) is a 31-item self-report questionnaire that measures three aspects of parental control in child feeding and four aspects of parental perceptions and concerns about child obesity using a 5-point Likert scale. The parental control subscales include restriction (8 items), pressure to eat (4 items), and monitoring of eating (3 items). The parental perceptions and concerns subscales include responsibility for feeding (13 items), perceived weight of parent (4 items), perceived weight of child (1-6 items) and concern about child weight (3 items). In MoBa, all items from the subscales of *Restriction* and *Pressure to eat* are included.

Psychometric Information:
Birch et al. (2001) reported coefficient alphas of .88 (Responsibility), .71 (Parent weight), .83 (Child weight), .75 (Concern about child weight), .70 (Pressure to eat), .73 (Restriction), and .92 (Monitoring) for the CFQ subscales. The validity of the CFQ has also been confirmed among samples of Hispanic and African-American parents (Anderson, et al., 2005) and in Japanese populations (Geng, et al., 2009).

Base References/Primary Citations:
Birch L.L., Fisher J.O., Grimm-Thomas K., Markey C.N., Sawyer R. & Johnson S.L. (2001). Confirmatory factor analysis of the Child Feeding Questionnaire: a measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite* 36: 201-210.

Anderson, C. B., Hughes, S. O., Fisher, J. O., & Nicklas, T. A. (2005). Cross-cultural equivalence of feeding beliefs and practices: The psychometric properties of the child feeding questionnaire among Blacks and Hispanics. *Preventive Medicine* 41(2): 521–531.

Geng, G. Zhu, Z. Suzuki, K. Tanka, T. Ando, D. Sato, M. & Yamagata, Z. (2009). Confirmatory factor analysis of the Child Feeding Questionnaire in Japanese elementary school children. *Appetite* 52: 8-14.

3. **Rationale for choosing the questions:**
   The CFQ is one of few existing measures assessing child feeding and perhaps the most widely used (Anderson, et al., 2005).

4. **Revision during the data collection period:**
   No revisions have been made.

Children's Eating Behaviour Questionnaire (CEBQ)

1. Name of original scale: The Children's Eating Behaviour Questionnaire (CEBQ)

	How well does this apply to your child?	Response options
1	My child enjoys tasting new foods	1-Never 2- Seldom 3-Sometimes 4-Often 5-Always
2	My child gets full up easily	
3	My child eats more when she is happy	
4	Given the choice, my child would eat most of the time	
5	My child eats slowly	
6	My child eats more when worried	
7	My child takes more than 30 minutes to finish a meal	
8	My child gets full before his/her meal is finished	
9	My child enjoys a wide variety of foods	
10	My child is interested in tasting food s/he hasn't tasted before	
11	If given the chance, my child would always have food in his/her mouth	
12	My child eats more when anxious	
13	If allowed to, my child would eat too much	
14	My child eats less when upset	
15	My child leaves food on his/her plate at the end of a meal	
16	My child eats less when angry	
17	My child eats more and more slowly during the course of a meal	
18	My child eats more when annoyed	

The items were used in all versions of Q-8year.

Section No. in different versions of the questionnaire

Q-8year	8yearA:18	8yearB:18	8yearC:18

2. Description of original scale: **Children's Eating Behaviour Questionnaire (CEBQ)**

The CEBQ (Wardle, et al., 2001) is a 35-item parent-report questionnaire assessing eating style in children. Eating style is assessed on 8 scales (food responsiveness, emotional overeating, satiety responsiveness, slowness in eating, emotional undereating, fussiness, enjoyment of food, and desire to drink). The items in the MoBa were selected from the first 5 subscales. Mothers rate the frequency of their child's behaviours and experiences on a 5-point scale (1-never, 2-rarely, 3-sometimes, 4-often, 5-always).

Psychometric Information:

The CEBQ scale has been shown to have good internal consistency (Cronbach's alphas ranging from .72 to .91), adequate two-week test-retest reliability (correlation coefficients ranging from .52 to .87) (Wardle, et al., 2001) and construct validity (Carnell, et al., 2007).

Base References/Primary Citations:

Carnell S & Wardle J. (2007). Measuring behavioural susceptibility to obesity: validation of the child eating behaviour questionnaire. *Appetite* 48:104-113.

Wardle, J., Guthrie, C. A., Sanderson, S., & Rapoport, L. (2001). Development of the children's eating behaviour questionnaire. *Journal of Child Psychology and Psychiatry* 42(7): 963-970.

3. Rationale for choosing the instrument:

The CEBQ is a psychometrically sound tool for assessing children's eating behaviours.

4. Revision during the data collection period:

No revisions have been made.

Questionnaire of Eating and Weight Patterns-Parent report (QEWP-P)

1. Name of original scale: Questionnaire of Eating and Weight Patterns-Parent report (QEWP-P)

	Is the following correct for your child for the last 6 months?	Response options
1	Did your child ever eat what most people would think was a really big amount of food?	1- No 2- Yes
2	Did you have the impression that your child could not stop eating or that he/she could not control what or how much he/she was eating?	
3	How often did your child eat a really big amount of food when you had the impression that his/her eating was out of control?	1-Twice a week or more 2- Once a week 3- More rarely 4- Never

The items were used in all versions of Q-5year and Q-8year.

Section No. in different versions of the questionnaire

Q-5year	5yearA:28	5yearB:27	
Q-8year	8yearA:19	8yearB:19	8yearC:19

2. Description of original instrument: **Questionnaire of Eating and Weight Patterns-Parent report (QEWP-P)**

The QEWP-P (Johnson, et al., 1999) is a modified version of the Questionnaire of Eating and Weight Patterns (QEWP; Spitzer et al., 1992), which was developed to assess aspects of binge eating disorder which was introduced as a diagnostic category in the DSM-IV. The QEWP-P comprises 12 stem items of which several are followed up with detailed items. The first three items were selected into use in this section.

Psychometric Information:

Test-retest reliability assessed with a phi coefficient was .42 across a 3-week interval. The stability of diagnostic categories was higher for males than for females, who changed in 33% of the cases from the nonclinical binging to the no diagnosis category. Children in the binge eating disorder category had significantly higher scores on self-reported depression and self-reported behaviours associated with eating disorders than children in the no diagnosis and nonclinical binging categories.

Base References/Primary Citations:

Johnson, W. G., Grieve, F. G., Adams, C. D., & Sandy, J. (1999). Measuring binge eating in adolescents: Adolescent and parent 152 versions of the Questionnaire of Eating and Weight Patterns. *International Journal of Eating Disorders* 26(3): 301–314.

Johnson, W. G., Kirk, A. A., & Reed, AE. (2000). Adolescent version of the Questionnaire of Eating and Weight Patterns: Reliability and gender differences. *International Journal of Eating Disorders* 26(3): 301–314.

Spitzer, RL, Devlin M, Walsh BT, Hassin D, Wing R, Marcus M, Stunkard A, Wadden T, Yanovski S, Agras, S, Mitchell J, & Jonas C. (1992). Binge eating disorder: A multi-site field trial of the diagnostic criteria. *International Journal of Eating Disorders* 11: 191–203.

3. Rationale for choosing the questions:

These items from the QEWP-P are the most developmentally appropriate parent-report measures of both binge eating episodes and loss of control over eating (personal communication with Leila Torgersen, August 2012).

4. **Revision during the data collection period:**
   No revisions have been made.