TwinLife Technical Report Series

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TwinLife Scales Manual

F2F1, CATI 1, F2F2, CATI2 & F2F3

v2.1.1

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https://www.twin-life.de/twinlife-series

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***TwinLife* Scales Manual: F2F1, CATI 1, F2F2, CATI2 & F2F3 v2.1.1**

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TwinLife Scales Manual - v2.1.1

For the scales used in face to face interview wave one (F2F1), telephone interview wave one (CATI1), face to face interview wave two (F2F2), telephone interview wave two (CATI2), and face to face interview wave three (F2F3)

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Introduction

This publication is an update of a previous version of the scales manual and is valid for the first two complete waves of data collections and the third face to face interview of the *TwinLife* study (data version 6.0.0).

The aim of the German twin family study *TwinLife* is to investigate the development of social inequalities over the life course (Diewald et al., 2021). For this purpose, household (face to face) and telephone (CATI) interviews take place every year at regular rotation interviewing 4,097[1] twin pairs of four age cohorts and their families. To cover different domains that are relevant in the context of social inequality, the *TwinLife* study focuses on six broad categories of constructs: 1) skill formation and education, 2) career, labour market attainment, and welfare, 3) political and social integration and participation, 4) subjective perception of quality of life, 5) physical and psychological health, and 6) psychopathology and deviant behavior. In addition to these domains, many demographic and environmental measures are also assessed. For more information on the *TwinLife* study, see Hahn et al. (2016) or Mönkediek et al. (2019).

The *TwinLife* study uses items of well-validated scales that are commonly used in contemporary social science. Both, entire scales and selected items were chosen. These items have been selected with regard to common selection methods (e.g., factor loadings or predictive power) and represent theoretical assumed latent constructs. This technical report provides information on the scales used in the *TwinLife* study face to face wave one, two and three as well as telephone wave one and two (for more information on the methodology, see the methodology reports on the *TwinLife* documentation website, https://www.twin-life.de/documentation/downloads). Although the *TwinLife* data can be used to compute various indexes and scales, in this report we will focus on those scales that clearly emerge from the corresponding literature. The scale construction is suggested in a way that a high numeric value always represents a high expression of the construct if not indicated otherwise.

As this is rather an excerpt of the survey than a comprehensive documentation on item level, a complete overview of all items can be found under https://paneldata.org/twinlife/#instruments. More detailed information on *TwinLife* in general is provided under https://www.twin-life.de/documentation/. The following information are

[1] This number refers to the initial sample of the first face to face interview wave. Please note that one of the original families has been removed due to unresolvable inconsistencies.

provided for every construct relevant to this report: A short summary of the scale, an overview of the scale's items, the mode in which these items were assessed[2] and the measurement's source[3]. Items that need to be recoded are indicated by the abbreviation (r) while items that need to be inverted are indicated by the abbreviation (i). Further information on the data structure that may be useful for this report can be found in Appendix A; a SPSS syntax for all scales mentioned in this manual is provided in Appendix B and a similar R Markdown syntax in Appendix C. The syntax can be applied on the *TwinLife* data set in person format (for more information, please refer to the introduction notes of the syntax).

[2] The main mode will be reported throughout this manual. However, in face to face interviews, a smaller proportion of the participants, i.e. individuals that were difficult to contact, was sometimes offered a paper-pencil based (for face to face wave one) or a telephone-online based variant of the interview (starting in face to face wave two) instead.

[3] Please keep in mind that the original survey language is German. Subsequently, all translations provided in this manual are rather an assistance in using the *TwinLife* data than validated English translations of established scales. For this reason, we recommend you to always consult the original resources first when considering re-using *TwinLife's* items. But, if the items are in English originally and translated into German for *TwinLife*, the item texts here correspond to the original English items if not indicated otherwise. Please note that references not directly related to the measurement's source are reported under "general references". In *TwinLife*, some formulations are based on the participants' gender, which can be changed by the participants every data collection. Starting with F2F3, also a gender-neutral category is introduced and questions are reformulated for this category, which is not covered here. As there is no established gender-neutral pronoun in German language, alternative and already established constructs to indicate gender fairness (*) are used, but are lost in the translation, as there is no English equivalent.

Change log v2.1.0 & v2.1.1

Compared to the previous version (Baum et al., 2020), numerous modifications and improvements have been made to facilitate working with the scales manual. In v2.1.0 the changes are as following:

v2.1.0:

- Information on the third face to face interview was added
- Inclusion of the scales *Narcissism, Fear of Failure, Social Trust, Problematic Smartphone Use, Right-Wing Authoritarianism, Social Dominance Orientation, Worrying, Injustice Sensitivity, Report Cards and Grades*
- Because changes in the filtering conditions were necessary in face to face wave three to obtain consistent measurements for each cohort, deviations in filtering are now reported in a new info-box (see chapter info-box for more information).
- Changes in variable names for *Bullying*
- Value labels were corrected for *Life Goals*
- Better source of the *CHAOS*-scale was introduced
- Different wordings of the same items in different age groups are now stated more explicitly (*Motivation, Parenting, Bullying*)
- DOI-Source of the *ARSQ* was corrected in this version and missing DOIs were added; citations changed according to APA 7th edition
- Correction of typing errors, misspellings, and inconsistencies between documentations
- Optimizations for black-white printing and color-blindness, revision of the design
- Correction of syntax errors (*CHAOS*) and addition of codes for new constructs in the SPSS syntax, also appending a syntax for R

v2.1.1:

- Correction of R syntax errors (*Personality* and *Internalizing*)
- Correction of the scales for *Learning motivation*

Abbreviations

In this report, several relevant abbreviations are frequently used:

- F2F = Face to Face Interview
- F2F1 = Face to Face Interview wave one
- F2F2 = Face to Face Interview wave two
- F2F3 = Face to Face Interview wave three

- CASI = Computer Assisted Self(-administered) Interview
- CAPI = Computer Assisted Personal Interview
- PAPI = Paper and Pencil Interview

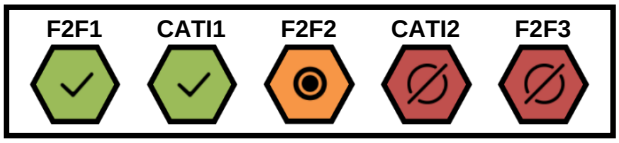
} components of the face to face interviews

- CATI = Computer Assisted Telephone Interview
- CATI1 = Computer Assisted Telephone Interview wave one
- CATI2 = Computer Assisted Telephone Interview wave two

Traffic Light System

For a better orientation, a traffic light system is used to indicate whether a construct was assessed in a given released data collection. The used colours and symbols are presented below:

- Green or ✓: The construct was assessed in this data collection
- Orange or ●: The construct was assessed in this data collection, but in a modified form (compared to a former wave, mostly changes in the filtering routine)
- Red or Ø: The construct was not assessed in this data collection



Example: This illustrative construct was assessed in face to face wave one and telephone wave one. In face to face wave two, it was also assessed – but in a modified form. In the telephone wave two and the face to face wave three, it was not assessed.

Filtering info-box

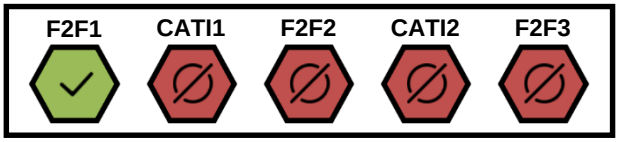
As the panel progressed, not every scale was assessed for all participants in every wave, hence deviations in filtering conditions may occur. To provide the filtering condition at a glance, we introduced an info-box that contains the filtering conditions for every wave, this particular scale was a part of, starting with version 2.1.0. You will find six different kinds of notations in this info box. In case of proxy reports (parental report), the filtering condition is provided for the target of this report.

1. Filtering via third variables is explicitly stated (e.g., F2F1: School attendance; only school attendees received the items of a scale).
2. Filtering via age maximum (e.g., F2F2: -11; only participants aged 11 or younger received these questions)
3. Filtering via age minimum (e.g., F2F3: 10+, only participants aged 10 or older received these questions).
4. Filtering via age range (e.g., F2F1: 5-7, only participants aged 5 to 7 received these questions).
5. Questions were only for new entrants in the panel (e.g., F2F2: N)
6. A scale was not part of a data collection (e.g., F2F3: Ø) [4]

Example: This construct was filtered in F2F1 and F2F2 via school attendance, in F2F3 additionally with an age maximum restriction of 11, so only participants aged 11 or younger were asked.

F2F1 + F2F2:
School attendance
F2F3:
School attendance
& -11

[4] Please note, that we provide this information only, if the traffic light system indicates orange for a construct, in order to keep the info box short and also distinct from the traffic light system.



Skill Formation and Education

Cognitive Abilities

Summary

In face to face wave one[5], the Culture Fair Test (CFT; Weiß, 2006; Weiß & Osterland, 2012) was used to measure non-verbal (fluid) intelligence as a proxy for general cognitive ability. Fluid intelligence can be defined as the ability to solve problems without having to resort to previous experience and is influenced by biological factors (Horn & Cattell, 1966; Schmidt-Atzert & Amelang, 2012). In the *TwinLife* study, the type of assessment differed according to the age of the surveyed person. For participants aged 5 to 9 years, three different subtests (figural reasoning, figural classification, and matrices; CFT 1-R; Weiß & Osterland, 2012) were used to assess non-verbal (fluid) intelligence. For participants 10 years of age and older, four subtests were used (reasoning in addition to the three aforementioned; CFT 20-R; Weiß, 2006). For children, the test battery was applied in a paper-and-pencil version (PAPI) administered by a trained interviewer. The older group completed a computer-based version of the test (CASI). For more information on this measure, see Gottschling (2017).

As the participants' test-time varied, there are two sets of variables (right answers in a given test-time) and three sets of sum scores (sum of right answers in a given test-time) that can be used depending on the concrete research question:

- Short version: Right answers given in standard test-time (3 – 4 minutes depending on subtest)
- Long version: Right answers given in the additional minute of test-time[6]
- Sum score: Sum of right answers given in standard test-time (short), in the additional minute (long), and combined (total)

[5] In face to face wave two, this construct was assessed only for new entrants.

[6] The additional minute was given if the participant had not finished the subtest in the regular test time.

Scales and items

F2F1: 5-9
F2F2: N

CFT 1-R

Subtest 1 – Figural Reasoning:

- Short version: igf0540, ifg0541, igf0542, igf0543, igf0544, igf0545, igf0546, igf0547, igf0548, igf0549, igf0550, igf0551, igf0552, igf0553, igf0554
- Long version: igf0560, igf0561, igf0562, igf0563, igf0564, igf0565, igf0566, igf0567, igf0568, igf0569, igf0570, igf0571, igf0572, igf0573, igf0574
- Sum scores: igf0580 (short), igf0581 (long), igf0582(total)

Item example:

Subtest 2 - Figural Classification:

- Short version: igf0640, igf0641, igf0642, igf0643, igf0644, igf0645, igf0646, igf0647, igf0648, igf0649, igf0650, igf0651, igf0652, igf0653, igf0654
- Long version: igf0660, igf0661, igf0662, igf0663, igf0664, igf0665, igf0666, igf0667, igf0668, igf0669, igf0670, igf0671, igf0672, igf0673, igf0674
- Sum scores: igf0680 (short), igf0681 (long), igf0682 (total)

Item example:

Subtest 3 - Matrices:

- Short version: igf0740, igf0741, igf0742, igf0743, igf0744, igf0745, igf0746, igf0747, igf0748, igf0749, igf0750, igf0751, igf0752, igf0753, igf0754
- Long version: igf0760, igf0761, igf0762, igf0763, igf0764, igf0765, igf0766, igf0767, igf0768, igf0769, igf0770, igf0771, igf0772, igf0773, igf0774
- Sum scores: igf0780 (short), igf0781 (long), igf0782 (total)

Item example:

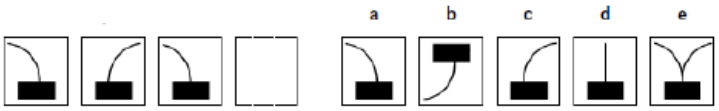
CFT 20-R

F2F1: 10+
F2F2: N

Subtest 1 – Figural Reasoning:

- Short version: igf0140, igf0141, igf0142, igf0143, igf0144, igf0145, igf0146, igf0147, igf0148, igf0149, igf0150, igf0151, igf0152, igf0153, igf0154
- Long version: igf0160, igf0161, igf0162, igf0163, igf0164, igf0165, igf0166, igf0167, igf0168, igf0169, igf0170, igf0171, igf0172, igf0173, igf0174
- Sum scores: igf0180 (short), igf0181 (long), igf0182(total)

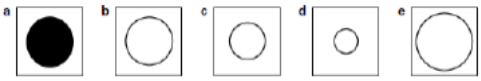
Item example:



Subtest 2 - Figural Classification:

- Short version: igf0240, igf0241, igf0242, igf0243, igf0244, igf0245, igf0246, igf0247, igf0248, igf0249, igf0250, igf0251, igf0252, igf0253, igf0254
- Long version: igf0260, igf0261, igf0262, igf0263, igf0264, igf0265, igf0266, igf0267, igf0268, igf0269, igf0270, igf0271, igf0272, igf0273, igf0274
- Sum scores: igf0280 (short), igf0281 (long), igf0282 (total)

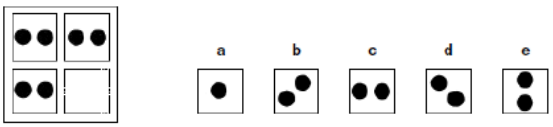
Item example:



Subtest 3 - Matrices:

- Short version: igf0340, igf0341, igf0342, igf0343, igf0344, igf0345, igf0346, igf0347, igf0348, igf0349, igf0350, igf0351, igf0352, igf0353, igf0354
- Long version: igf0360, igf0361, igf0362, igf0363, igf0364, igf0365, igf0366, igf0367, igf0368, igf0369, igf0370, igf0371, igf0372, igf0373, igf0374
- Sum scores: igf0380 (short), igf0381 (long), igf0382 (total)

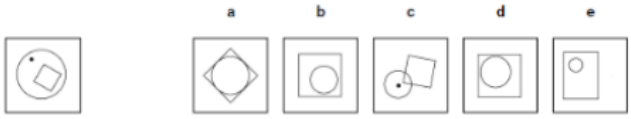
Item example:



Subtest 4 – Reasoning:

- Short version: igf0440, igf0441, igf0442, igf0443, igf0444, igf0445, igf0446, igf0447, igf0448, igf0449, igf0450
- Long version: igf0460, igf0461, igf0462, igf0463, igf0464, igf0465, igf0466, igf0467, igf0468, igf0469, igf0470
- Sum scores: igf0480 (short), igf0481 (long), igf0482 (total)

Item example:



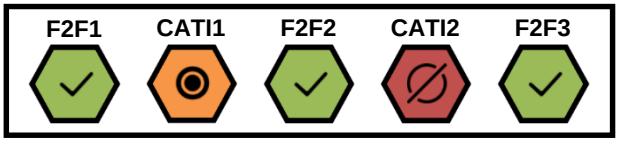
References

CFT 1-R:

Weiß, R. H., & Osterland, J. (2012). *Grundintelligenztest Skala 1 - Revision: CFT 1-R* [Basic intelligence test scale 1 – Revision: CFT 1-R]. Hogrefe.

CFT 20-R:

Weiß, R. H. (2006). *CFT 20-R. Grundintelligenztestskala 2 - Revision* [CFT 20-R. Basic intelligence test scale 2 - Revision]. Hogrefe.



Report Cards and School Grades

Summary

As frequent requests to school grades reached us, we decided to put up a chapter on report cards and school grades in order to guide data users through these variables, although it is not a scale. Please note that the focus of this chapter will be the school grades, especially average grades and grades for the school subjects math and German. However, additional information (types of school, type of report card provided by a participant, further grades on other subjects, etc.) can be accessed in the codebooks. *TwinLife* participants were asked if their (or that of their children) most recent report card was available. After obtaining consent, photos of the report cards were taken and later coded. If a report card was not available or participants did not consent, information about the report cards was collected in the interview using substitute questions (i.e., questions regarding grades for math and German or average grade). For more information about the variables see *TwinLife* Report no. 4 (Mattheus et al. 2021).

Information about report cards based on interviews (substitute questions)

Scales and items

Highest school-leaving qualification

"Please indicate the grade of your highest school-leaving qualification"

- cer1100: Average grade of highest school-leaving qualification

F2F1: Finished school
F2F2 + F2F3 + CATI1: Ø

"Please specify your final grade on your highest educational degree/diploma/qualification."

- eca0105: Grade of highest school-leaving qualification

F2F1 + F2F2 + F2F3: Finished school
CATI1: Ø

- eca0906: New school graduation: Average grade

F2F1: Ø
CATI1 + F2F3: New graduation

School grades (self-report)

"Please report the math and German grades of your last report card."

- cer1400: Math grade of last report card (in CATI1: cer0100)
- cer1500: German grade of last report card (in CATI1: cer0200)

F2F1 + F2F2 + F2F3: School attendance
CATI1: 15 +

School grades (proxy-report)

“Please indicate the grades <NAME OF CHILD> received in his/her last report card in the following subjects.”

F2F1: Ø
CATI1 + F2F2 + F2F3: School attendance

- cer1004[t/u/s]: Math grade of last report card (in CATI1: cer0100[t/u/s])
- cer1005[t/u/s]: German grade of last report card (in CATI1: cer0200[t/u/s])

Information about report cards based on photos

Scales and items

F2F1 + F2F2 + F2F3: Finished school
CATI1: Ø

Highest school-leaving qualification

- cer2103: Photo: Average grade of final report card

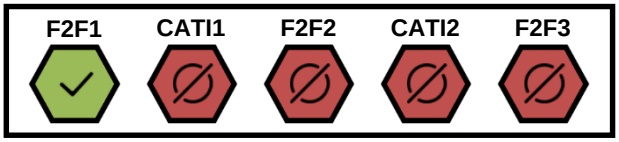
School grades

F2F1 + F2F2 + F2F3: School attendance
CATI1: Ø

- cer2200: Math grade of last report card
- cer2201: German grade of last report card
- further grades of other subjects, e. g., cer2208: English grade of last report card

Further reading:

Mattheus, S., Starr, A., Kornadt, A., & Riemann, R. (2021). Documentation TwinLife Data: Report Cards (TwinLife Technical Report Series, 04) v1.1.0. Bielefeld: Project TwinLife "Genetic and social causes of life chances" (Universität Bielefeld / Universität des Saarlandes). https://pub.uni-bielefeld.de/record/2951442



Academic Self-Concept

Summary

Academic self-concept is defined as “a student´s perception of his or her academic competence” (Arens & Waterman, 2015, p. 64). In the *TwinLife* study, participants aged 5 to 7 rated their verbal and mathematical self-concept using three and four items, respectively, from the adapted and translated Self-Description Questionnaire for Preschoolers (SDQP; Marsh et al., 2002) via CAPI in face to face wave one.

Scales and items

F2F1: 5-7

Academic self-concept - SDQP

Response format:

1	2	3	4
Yes, normally good, about like other children	Yes, really good, better than other children	No, not so good, not as good as other children	No, not good at all, not as good as other children at all
Recoding			
3	4	2	1

Verbal self-concept: asc0100(r), asc0101(r), asc0102(r)

- asc0100: Are you good at reading? (r)
- asc0101: Do you know lots of letters of the alphabet? (r)
- asc0102: Do you know lots of different words? (r)

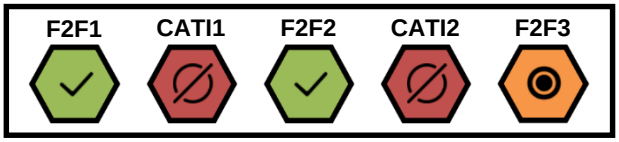
Mathematical self-concept: asc0103(r), asc0104(r), asc0105(r), asc0106(r)

- asc0103: Are you good at telling the time? (r)
- asc0104: Do you know lots of different shapes? (r)
- asc0105: Are you good at counting? (r)
- asc0106: Do you know lots of numbers? (r)

References

SDQP:

Marsh, H. W., Ellis, L. A., & Craven, R. G. (2002). How do preschool children feel about themselves? Unravelling measurement and multidimensional self-concept structure. *Developmental Psychology*, *38*(3), 376-393. https://doi.org/10.1037/0012-1649.38.3.376



Self-Perceived Ability

Summary

Self-perceived ability is defined as “a cognitive representation of one's ability level in an academic achievement situation” (Weidinger et al., 2016, p. 117). Self-perceived ability in general was assessed differently depending on the age of the interviewed person. Preschool children were assessed via one item, while all school attendees were assessed via three items in the CAPI module in face to face wave one and two. However, in face to face wave three, questions were limited to respondents aged 11 or younger. In the CASI module (face to face wave one), or CAPI module (face to face wave two/face to face wave three), parental report was assessed for all preschool children. The self-perceived ability concerning two specific school subjects (i.e., math and German) was further assessed for school attendees via self-report in face to face wave one and wave two. The assessment for school attendees was based on the “Skalen zum akademischen Selbstkonzept” [Scales on the academic self-concept] (SESSKO; Dickhäuser et al., 2002). Perceived ability concerning one’s job was also assessed for participants aged 16 or older via CAPI in all face to face waves and was adapted from the Intrinsic Motivation Inventory (IMI; Deci & Ryan, n.d.).

Scales and items

Self-perceived ability – in general – SESSKO

F2F1 + F2F2 + F2F3: Preschool

Self-report: spa0100(r)
“Please tell me whether the following statements apply to you.”
Response format:

1	**2**
Yes	No
Recoding	
1	0

- spa0100: Do you think you will do well at school? (r)

Self-report: spa0200, spa0201, spa0202(i)

F2F1 + F2F2:
School attendance
F2F3:
School attendance & -11

"Please rate how well each of the following statements applies to you."

Response format:

1	2	3	4	5
Not talented	-	-	-	Very talented

- spa0200: I am … in school.

Response format:

1	2	3	4	5
Just a little	-	-	-	A lot

- spa0201: I know … in school.

Response format:

1	2	3	4	5
Easy	-	-	-	Difficult

- spa0202: In school, many assignments are … for me. (i)

Parental report: spa0100(t/u/s), spa0202(t/u/s)

F2F1 + F2F2 + F2F3:
Preschool

"Please rate the extent to which each statement applies."

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- spa0100(t/u/s): <Name of child> will do well in school.
- spa0202(t/u/s): School will be easy for <name of child>.

Self-perceived ability – Math – SESSKO: spa0300, spa0301, spa0302(i)

F2F1 + F2F2: School attendance
F2F3: Ø

"Please answer using the following scale."

Response format:

1	2	3	4	5
Not talented	-	-	-	Very talented

- spa0300: I am … in math.

Response format:

1	2	3	4	5
Just a little	-	-	-	A lot

- spa0301: I know … in math.

Response format:

1	2	3	4	5
Easy	-	-	-	Difficult

- spa0302: In math, many exercises are …(i)

Self-perceived ability – German – SESSKO: spa0400, spa0401, spa0402(i)

F2F1 + F2F2: School attendance
F2F3: Ø

Response format:

1	2	3	4	5
Not talented	-	-	-	Very talented

- spa0400: I am … in German.

Response format:

1	2	3	4	5
Just a little	-	-	-	A lot

- spa0401: I know … in German.

Response format:

1	2	3	4	5
Easy	-	-	-	Difficult

- spa0402: In German, many assignments are …(i)

Self-perceived job ability – IMI: spa0500, spa0501, spa0502, spa0503, spa0504

F2F1 + F2F2 + F2F3: Employed

"Please rate the extent to which each statement applies to you."

Response format[7]:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- spa0500: I think I am pretty good at my job.
- spa0501: I think I am doing pretty well at my job, compared to my colleagues.
- spa0502: After working at my job for a while, I felt pretty competent.
- spa0503: I am satisfied with my performance at my job.
- spa0504: I am pretty skilled at my job /at the things I am doing at my job.

References

SESSKO:

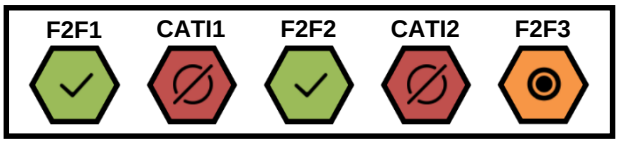
Dickhäuser, O., Schöne, C., Spinath, B., & Steinsmeier-Pelster, J. (2002). Die Skalen zum akademischen Selbstkonzept [Scales on the academic self-concept]. *Zeitschrift Für Differentielle und Diagnostische Psychologie*, *23*(4), 393–405. https://doi.org/10.1024//0170-1789.23.4.393

IMI:

Deci, E. L., & Ryan, R. M. (n.d.). Intrinsic motivation inventory. https://gih.instructure.com/files/2040/download?download_frd=1

[7] In the original, the scale ranged from 1 to 7.

Motivation



Intrinsic Motivation

Summary

Motivation as a construct can, for instance, be categorized in two dimensions: Extrinsic vs. intrinsic motivation (Fetchenhauer, 2017). While behavior shown in the expectation of a subsequent positive effect can be attributed to extrinsic motivation, intrinsic motivated behavior is shown for the sake of the cause itself. In the *TwinLife* study, the focus was – among other motivational constructs – on intrinsic motivation. Intrinsic motivation was measured with adapted items of the "Skala zur Erfassung subjektiver schulischer Werte" [Scale for the assessment of subjective school values] (SESSW; Steinmayr & Spinath, 2010). Anticipated intrinsic motivation in preschool children was assessed via self-report and parental report. Intrinsic motivation of school attendees was further assessed for school in general (in all waves) as well as for several specific subjects separately (i.e., math and German; only F2F1 and F2F2) for all school participants aged 5 or older as a self-report. The construct was assessed via CAPI (self-report in all waves, parental reports in wave three) and CASI (parental report in wave one and two).

Scales and items

Anticipated intrinsic motivation

F2F1 + F2F2 + F2F3: Preschool

Self-report: imo0100(r), imo0101(r), imo0102(r)

"Please tell me whether the following statements apply to you."

Response format:

1	2
Yes	No
Recoding	
1	0

- imo0100: Do you think you will like school? (r)
- imo0101: Do you think you will like learning at school? (r)
- imo0102: Are you looking forward to school? (r)

Parental report: imo0100(t/u/s), imo0101(t/u/s), imo0102(t/u/s)

F2F1 + F2F2 + F2F3: Preschool

"Please rate the extent to which each statement applies."

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0100(t/u/s): I believe that <name of child> will like school.
- imo0101(t/u/s): I believe that <name of child> will like what he/she will learn at school.
- imo0102(t/u/s): <Name of child> is looking forward to school.

Intrinsic motivation: imo0200, imo0201, imo0202

F2F1 + F2F2: School attendance
F2F3: School attendance & -11

"Please rate the extent to which each statement applies to you."

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0200: I like doing the things that I learn at school.
- imo0201: School is fun.
- imo0202: Things that I learn (at school) are interesting.

Intrinsic motivation – Math: imo0300, imo0301, imo0302

F2F1 + F2F2: School attendance
F2F3: Ø

"Please rate the extent to which each statement applies to you."

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0300: I like doing maths.
- imo0301: Maths is fun.
- imo0302: Maths is interesting.

Intrinsic motivation – German: imo0400, imo0401, imo0402

F2F1 + F2F2: School attendance
F2F3: Ø

"Please rate the extent to which each statement applies to you."

Response format:

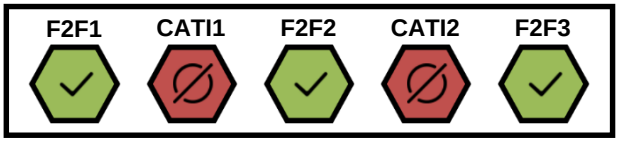
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0400: I like doing German.
- imo0401: German is fun.
- imo0402: German is interesting.

References

SESSW:

Steinmayr, R., & Spinath, B. (2010). Konstruktion und erste Validierung einer Skala zur Erfassung subjektiver schulischer Werte (SESSW) [Construction and first validation of a scale for the assessment of subjective school values (SESSW)]. *Diagnostica*, *56*(4), 195-211. https://doi.org/10.1026/0012-1924/a000023



Learning Motivation

Summary

Learning motivation can be defined as “a common motivational factor underlying the conceptions of intrinsic motivation, interest, and learning goals” (Spinath & Spinath, 2005, p. 89). In the *TwinLife* study, the “Skalen zur Erfassung der Lern- und Leistungsmotivation” [Scales for the assessment of learning and performance motivation] (SELLMO-S; Spinath et al., 2002) were used to measure learning motivation. For preschool children, anticipated learning motivation was assessed with an adapted version of the SELLMO-S. School attendees rated their actual learning motivation with different formulations depending on the participant’s age. These items were assessed as a self-report in the CAPI module. Furthermore, learning motivation related to one’s job was assessed for participants aged 16 or older in the CAPI module with an adapted version of the SELLMO-S.

Scales and items

Anticipated learning motivation: imo0103(r), imo0104(r), imo0105(r)

F2F1 + F2F2 + F2F3: Preschool

“Please tell me whether the following statements apply to you.”

Response format:

1	**2**
Yes	No
Recoding	
1	0

- imo0103: Are you looking forward to learning something interesting at school? (r)
- imo0104: Are you looking forward to understanding difficult things? (r)
- imo0105: Are you looking forward to learning as much as possible? (r)

Learning motivation (school attendees)

"Please rate the extent to which the following statement applies to you."

At school, I am interested in…

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

Version 1 – Younger participants: imo0550, imo0551, imo0552

- imo0550: ... learning something interesting.
- imo0551: ... understanding difficult things.
- imo0552: ... learning as much as possible.

F2F1 + F2F2: School attendance & -9
F2F3: School attendance & -10

Version 2 – Older participants: imo0500, imo0501, imo0502

- imo0500: ... learning something interesting.
- imo0501: ... getting motivated to think about things.
- imo0502: ... gaining a thorough understanding of content.

F2F1 + F2F2: School attendance & 10+
F2F3: School attendance & 11+

Job learning motivation: imo0600, imo0601, imo0602

"Please rate the extent to which each statement applies to you. It is important for me in the context of my professional work …"

F2F1 + F2F2 + F2F3: Employed

Response format:

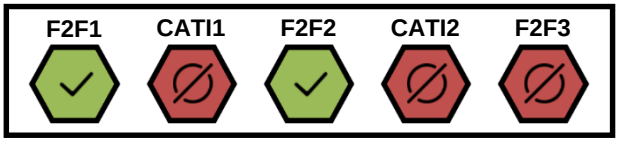
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0600: ... to learn something interesting.
- imo0601: ... to get motivated to think about things.
- imo0602: ... to gain a thorough understanding of content/really understand something.

References

SELLMO-S:

Spinath, B., Stiensmeier-Pelster, J., Schöne, C., & Dickhäuser, O. (2002). *Skalen zur Erfassung der Lern- und Leistungsmotivation: SELLMO* [Scales for the assessment of learning and performance motivation: SELLMO]. Hogrefe.



Achievement Motivation

Summary

Achievement motivation can be defined as “the need for excellence and significant accomplishment, despite what rewards may be offered after the achievement has been met” (Hsieh, 2011, p. 2). In the *TwinLife* study, achievement motivation as a self-report was assessed differently depending on the age of the participant (between 7 and 15 years of age vs. aged 16 and older), with more and broader items for older participants in face to face wave one and face to face wave two. It was further assessed as a parental report for all school attendees in all three waves. All items were developed for the *TwinLife* study and were assessed in the CASI module of face to face wave one and in the CAPI module of face to face wave two.

Scales and items

Self-report: imo0701

“Please rate the extent to which each statement applies to you.”

Response format:

F2F1 + F2F2: 7-15

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

- imo0701: It is important for me to get good grades.

Self-report: imo0700, imo0702

“Please rate the extent to which each statement applies to you.”

Response format:

F2F1 + F2F2: 16+

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

- imo0700: Good achievements mean a lot to me.
- imo0702: In order to get ahead in life, I am prepared to put in great efforts.

Parental report: imo0701(t/u/s)

"Please rate the extent to which the following statement applies."

Response format:

F2F1 + F2F2: -15

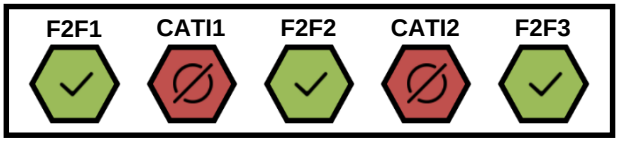
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0701(t/u/s): It is important for me that <name child> gets good grades.

References

GOALS:

Items developed for *TwinLife*



Self-Efficacy

Summary

Self-efficacy – the evaluation of one's own competencies to be capable of performing actions successfully (Bandura, 1977) – was measured in face to face wave one in the CASI module and in face to face wave two and wave three in the PAPI module for participants aged 10 years or older (in face to face wave three for participants aged 11 years or older). In the *TwinLife* study, three items from the "Allgemeine Selbstwirksamkeit Kurzskala" [General self-efficacy short scale] (ASKU; Beierlein et al., 2012) were used to measure this construct.

Scales and items

Self-efficacy: sef0100, sef0101, sef0102

F2F1 + F2F2: 10+
F2F3:11+

"To what extent do you agree with these statements?"

Response format:

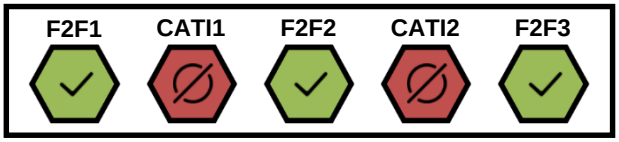
1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

- sef0100: I can rely on my own abilities in difficult situations.
- sef0101: I am able to solve most problems on my own.
- sef0102: I can usually solve even challenging and complex tasks well.

References

ASKU:

Beierlein, C., Kovaleva, A., Kemper, C. J., & Rammstedt, B. (2012). *Ein Messinstrument zur Erfassung subjektiver Kompetenzerwartungen: Allgemeine Selbstwirksamkeit Kurzskala (ASKU)* [A measurement tool to assess subjective perceived competence: General self-efficacy short scale (ASKU)]. GESIS. https://doi.org/10.23668/psycharchives.418



Self-Esteem

Summary

According to Rosenberg et al. (1995), (global) self-esteem can be understood as “the individual’s positive or negative attitude toward the self as a totality” (p. 141). In the *TwinLife* study, this construct was assessed either as a self- or as a parental report. As a self-report, self-esteem was assessed using three items from pairfam (Thoennissen et al., 2014; items are based on the Rosenberg Self-Esteem Scale; RSE; Rosenberg, 1965). For the parental report (participants aged 5 to 12), two of these items were reformulated. In face to face wave one, the self-report (participants aged 13 or older) and the parental report (participants aged 5 to 12) were assessed in the CASI module. In face to face wave two and three, this construct was assessed as self-report (F2F2: Participants aged 10 or older; F2F3: Participants aged 11 or older) in the PAPI module and as parental report (participants aged 5 to 12) in the CASI module.

Scales and items

Self-report: ses0100(i), ses0101, ses0102

F2F1: 13+
F2F2: 10+
F2F3: 11+

“To what extent do you agree with these statements?”

Response format:

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

- ses0100: At times I think I am no good at all. (i)
- ses0101: I take a positive attitude toward myself.
- ses0102: On the whole, I am satisfied with myself.

Parental report: ses0200(t/u/s), ses0102(t/u/s)

F2F1 + F2F2 + F2F3:
-12

"Please rate the extent to which the following statements apply."

Response format:

1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

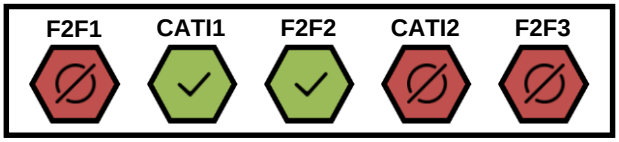
- ses0200(t/u/s): <Name of child> is self-confident.
- ses0102(t/u/s): I believe, all in all, <name of child> is satisfied with him-/herself.

References

Thoennissen, C., Wilhelm, B., Friedrich, S., Alt, P., & Walper, S. (2014). *Scales Manual of the German Family Panel*. Wave 1 to 6. http://www.pairfam.de/fileadmin/user_upload/redakteur/publis/Dokumentation/Manuals/Scales_Manual_pairfam_6.0.pdf

RSE:

Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Acceptance and Commitment Therapy. Measures Packages*, *61*(52), 61-62. https://integrativehealthpartners.org/downloads/ACTmeasures.pdf



Self-Regulation

Summary

Self-regulation was measured in CATI wave one and face to face wave two (CASI) and can be defined as the regulation of one's own behavior while showing resistance to unwanted behavioral tendencies in favor of desired behavioral tendencies (Baumeister et al., 2007; Muraven & Baumeister, 2000). In the *TwinLife* study, self-regulation was assessed using items from two different questionnaires: Three items of the BISS scale (a German adaption of the Grit Scale (Consistency of Interests); Fleckenstein et al., 2014) and three items of the German short version of the Self-Control Scale (SCS-K-D; Bertrams & Dickhäuser, 2009). This construct was either assessed via self-report (participants aged 10 and older) or parental report (participants aged 5 to 9; only SCS-K-D).

Caution: In this case, higher values mean a lower trait manifestation.

Scales and items

Self-report

CATI1 + F2F2: 10+

"How much do the following statements apply to you?"

Response format:

1	2	3	4	5
Not at all	-	-	-	Very much

Consistency of interest - BISS: srg0100, srg0200, srg0300

- srg0100: New ideas and projects sometimes distract me from previous ones.
- srg0200: I often set a goal but later choose to pursue a different one.
- srg0300: I become interested in new pursuits every few months.

Self-control – SCS-K-D: srg0400, srg0500, srg0600

- srg0400: I do certain things that are bad for me, if they are fun.
- srg0500: Pleasure and fun sometimes keep me from getting work done.
- srg0600: I wish I had more self-discipline.

Parental report

Self-control – SCS-K-D: srg0400(t/u/s), srg0500(t/u/s), srg0600(t/u/s)

CATI1 + F2F2: -9

"We are now talking about some statements that may more or less apply to your child. Please indicate for each statement how you rate <name of child> in comparison to other people."

Response format:

1	2	3	4	5
Not at all	-	-	-	Very much

- srg0400(t/u/s): <Name of child> does certain things that are bad for him/her if they are fun.
- srg0500(t/u/s): Pleasant activities sometimes prevent <name of child> from doing his/her duties.
- srg0600(t/u/s): I wish <name of child> had more self-discipline.

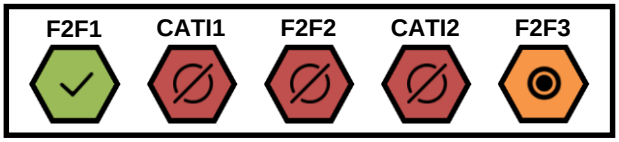
References

BISS:

Fleckenstein, J., Schmidt, F. T. C., & Möller, J. (2014). Wer hat Biss? Beharrlichkeit und beständiges Interesse von Lehramtsstudierenden. Eine deutsche Adaptation der 12-Item Grit Scale [Who has Grit? Persistence and consistent interest of student teachers. A German adaptation of the 12-Item Grit Scale.]. *Psychologie in Erziehung und Unterricht*, *61*, 281–286. http://dx.doi.org/10.2378/peu2014.art22d

SCS-K-D:

Bertrams, A., & Dickhäuser, O. (2009). Messung dispositioneller Selbstkontroll-Kapazität: Eine deutsche Adaptation der Kurzform der Self-Control Scale (SCS-K-D) [Measurement of dispositional self-control capacity: A German adaptation of the short form of the Self-Control Scale (SCS-K-D)]. *Diagnostica, 55,* 2–10. https://doi.org/10.1026/0012-1924.55.1.2



Personality

Summary

To assess personality as a construct, the Big Five Model was used. According to this approach, personality differences can be described by five distinct dimensions: Openness, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1985). In face to face wave one[8], two different versions of the Big Five Inventory were used to measure personality in the CASI module: every participant over 10 years of age rated their personality on the Big Five Inventory – Short Version (BFI-S; Gerlitz & Schupp, 2005); for younger children between 5 and 9 years of age, their parents rated their personality on the "Fünf Faktoren Fragebogen für Kinder – Kurzform" [Five factor questionnaire for children – short form] (FFFK-K; Weinert et al., 2007). In face to face wave three, only the BFI-S was used and was presented to children aged 11 or older in the PAPI and to participants older than 16 in the CASI module.

Scales and items

Self-report - BFI-S

F2F1: 10+
F2F2: N
F2F3: 11+

"I see myself as someone who …"

Response format:

1	2	3	4	5	6	7
Does not apply to me at all	-	-	-	-	-	Applies to me perfectly

Openness: per0103, per0108, per0113, per0115

- per0103: … is original, comes up with new ideas.
- per0108: … values artistic, aesthetic experiences. (This means I like to paint or make music; I like going to the theatre or to a museum.)[9]
- per0113: … has an active imagination. (This means I can easily visualize things and like to dream."

[8] In face to face wave two, this construct was assessed only for new entrants and some cases in cohort 2.

[9] Specifications of the items were provided for children aged 10 to 15. In the SOEP, they were not covered.

- per0115: … is eager for knowledge. (This means I am curious and interested in learning and new experiences.).

Conscientiousness: per0100, per0106(i), per0110

- per0100: … does a thorough job.
- per0106: … tends to be lazy. (i)
- per0110: … does everything efficiently.

Extraversion: per0101, per0107, per0111(i)

- per0101: … is talkative. (Which means, I enjoy talking to people and talk a lot.)
- per0107: … is outgoing, sociable.
- per0111: … is reserved, quiet. (i)

Agreeableness: per0102(i), per0105, per0112

- per0102: … is sometimes somewhat rude to others. (i)
- per0105: … has a forgiving nature. (Which means, I quickly accept apologies.)
- per0112: … is considerate and kind to almost everyone.

Neuroticism: per0104, per0109, per0114(i)

- per0104: … worries a lot.
- per0109: … gets nervous easily.
- per0114: … is relaxed, handles stress well. (i)

Additional item[10]: per0116

- per0116: … likes to have fun and doesn't worry about tomorrow.

[10] This item is intended to be part of the scale openness. As data analyses on the factor structure of *TwinLife's* personality assessment do not suggest a clear connection to openness, we recommend deciding whether this item is to be included or not depending on the particular research question.

Parental report – FFFK-K

F2F1: -9
F2F2: N
F2F3: Ø

"How would you rank your child in comparison to other children of the same age?"

Openness: per0403(t/u/s), per0408(t/u/s)(i)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Not that interested	-	-	-	-	-	-	-	-	-	Hungry for knowledge

- per0403(t/u/s): <Name of child> is not that interested – hungry for knowledge.

Response format:

0	1	2	3	4	5	6	7	8	9	10
Understands quickly	-	-	-	-	-	-	-	-	-	Needs more time

- per0408(t/u/s): <Name of child> understands quickly – needs more time. (i)

Conscientiousness: per0401(t/u/s), per0406(t/u/s)(i)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Untidy	-	-	-	-	-	-	-	-	-	Tidy

- per0401(t/u/s): <Name of child> is tidy – untidy.

Response format:

0	1	2	3	4	5	6	7	8	9	10
Focused	-	-	-	-	-	-	-	-	-	Easy to distract

- per0406(t/u/s): <Name of child> is focused – easy to distract. (i)

Extraversion: per0400(t/u/s)(i), per0405(t/u/s)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Talkative	-	-	-	-	-	-	-	-	-	Quiet

- per0400(t/u/s): <Name of child>is talkative – quiet. (i)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Withdrawn	-	-	-	-	-	-	-	-	-	Sociable

- per0405(t/u/s): <Name of child> is withdrawn – sociable.

Agreeableness: per0402(t/u/s)(i), per0407(t/u/s)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Good-natured	-	-	-	-	-	-	-	-	-	Irritable

- per0402(t/u/s): <Name of child> is good - natured – irritable. (i)

Response format:

0	1	2	3	4	5	6	7	8	9	10
Obstinate	-	-	-	-	-	-	-	-	-	Compliant

- per0407(t/u/s): <Name of child> is obstinate – compliant.

Neuroticism: per0404(t/u/s), per0409(t/u/s)(i)

“How would you rank your child in comparison to other children of the same age?”

Response format:

0	1	2	3	4	5	6	7	8	9	10
Self-confident	-	-	-	-	-	-	-	-	-	Insecure

- per0404(t/u/s): <Name of child>is self-confident – insecure.

Response format:

0	1	2	3	4	5	6	7	8	9	10
Fearful	-	-	-	-	-	-	-	-	-	Fearless

- per0409(t/u/s): <Name of child> is fearful – fearless. (i)

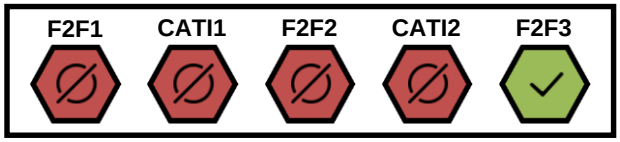
References

BFI-S:

Gerlitz, J. Y., & Schupp, J. (2005). Zur Erhebung der Big-Five-basierten Persönlichkeitsmerkmale im SOEP. Dokumentation der Instrumentenentwicklung BFI-S auf Basis des SOEP-Pretests 2005 [About the survey of the Big Five-based personality traits in SOEP. Documentation of the BFI-S instrument development based on the SOEP pretest 2005.]. *DIW Research, Notes 4*. https://www.diw.de/documents/publicationen/73/43490/rn4.pdf

FFFK-K:

Weinert, S., Asendorpf, J. B., Beelmann, A., Doil, H., Frevert, S., Lohaus, A., & Hasselhorn, M. (2007). *Expertise zur Erfassung von psychologischen Personenmerkmalen bei Kindern im Alter von fünf Jahren im Rahmen des SOEP* [Expertise on the assessment of psychological personality characteristics in children at the age of five in the context of SOEP]. DIW Berlin. https://www.econstor.eu/bitstream/10419/129229/1/diw_datadoc_2007-020.pdf



Narcissism

Summary

Narcissism can be seen as an individual's capacity to keep a positive self-image in a variety of processes and as a need or motivation to seek out validation, affirmations, or self-enhancement experiences from the social environment (Pincus et al., 2009). The construct was introduced in the third face to face interview. In *TwinLife*, the German Version of the Naughty Nine (Küfner et al., 2014), which is a short adaption of the Dirty Dozen by Jonason and Webster (2010), was used to capture narcissistic personality traits for participants aged 17 or older. For younger participants, a shortened and translated version of the Narcissistic Personality Questionnaire for Children-Revised (NPQC-R; Ang & Raine, 2009) was used.

Scales and items

Self-report – Naughty Nine: nar0100, nar0101, nar0102

F2F3: 17+

Response format:

1	2	3	4	5	6	7	8	9
Does not apply at all	-	-	-	-	-	-	-	Applies completely

- nar0100: I tend to want others to admire me.
- nar0101: I tend to want others to pay attention to me.
- nar0102: I tend to seek prestige and status.

Self-report – NPQC-R

F2F3: 11-16

Response format:

1	2	3	4	5
Does not apply at all	-	-	-	Applies completely

Superiority: nar0200, nar0201

- nar0200: I was born a good leader.
- nar0201: I am really a special person.

Exploitativeness: nar0202, nar0203

- nar0202: I am good at getting people to do things my way.
- nar0203: It is easy for me to control other people.

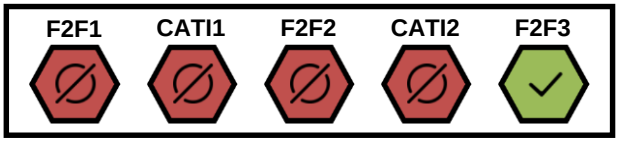
References

Naughty Nine:

Küfner, A.C.P, Dufner. M, & Back, M.D. (2014). Das Dreckige Dutzend und die Niederträchtigen Neun [The dirty dozen and the naughty nine]. *Diagnostica, 61*(2), 76-91. https://doi.org/10.1026/0012-1924/a000124

NPQC-R:

Ang, R. P., & Raine, A. (2009). Reliability, validity and invariance of the Narcissistic Personality Questionnaire for Children-Revised (NPQC-R). *Journal of Psychopathology and Behavioral Assessment*, *31*(3), 143-151. https://doi.org/10.1007/s10862-008-9112-2



Fear of Failure

Summary

One definition of fear of failure was proposed by Atkinson (1966) as a "disposition to avoid failure and/or a capacity for experiencing shame or humiliation as a consequence of failure" (p. 13). In *TwinLife*, fear of failure was measured with a translated version of the Performance Failure Appraisal Inventory – short form (PFAI; Conroy, 2003) and was introduced in face to face wave three. Participants older than 11 were to answer these questions via PAPI.

Scales and items

Self-report – PFAI – short form: fof0100, fof0101, fof0102, fof0103, fof0104

F2F3: 11+

Response format[11]:

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

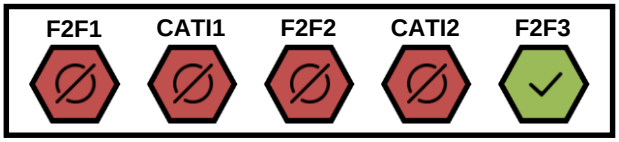
- fof0100: When I am failing, I worry about what others think about me.
- fof0101: When I am failing, I am afraid that I might not have enough talent.
- fof0102: When I am failing, it upsets my "plan" for the future.
- fof0103: When I am not succeeding, people are less interested in me.
- fof0104: When I am failing, important others are disappointed.

References

PFAI – short form:

Conroy, D. E. (2003). The performance failure appraisal inventory. *Brief User's Manual*. http://test.scripts.psu.edu/users/d/e/dec9/uploads/3/0/4/0/304067/2003_pfai_users_manual.pdf

[11] Original scale was ranging from -2: "Do not believe at all" over 0: "Believe 50% of the time" to 2: "Believe 100% of the time" but was altered for *TwinLife*.



Media Use

Problematic smartphone use

Summary

One potential definition of problematic smartphone use was proposed by Billieux (2012), defining it as “an inability to regulate one’s use of the mobile phone, which eventually involves negative consequences in daily life (e.g. financial problems)” (p. 299). The items were taken from the d-KV-SSS (Montag, 2018) a German adaption of the Smartphone Addiction Scale – Short Version (SAS-SV) by Kwon and colleagues (2013). The construct was introduced in face to face wave three and was part of the survey for all participants older than 5 and possessing an own smartphone. Participants older than 11 received the questions in the PAPI, younger participants received the questions in the CAPI module in a more simplified form.

Scales and items

Self-report - d-KV-SSS: med1200, med1201, med1202, med1203

Response format:

1	2	3	4	5	6
I do not agree at all	-	-	-	-	I strongly agree

Version 1 – Older participants:

F2F3: 11+

- med1200: I have a hard time concentrating in class, at the university or while working due to my smartphone use.
- med1201: I constantly check my smartphone so as not to miss conversations between other people on platforms such as Facebook, WhatsApp, Twitter, or similar platforms.[12]
- med1202: I use my smartphone longer than I had intended.
- med1203: The people around me tell me that I use my smartphone too much.

[12] In *TwinLife*, this item was modified to include a wider range of social media platforms compared to the original item.

Version 2 – Younger participants:

F2F3: -10

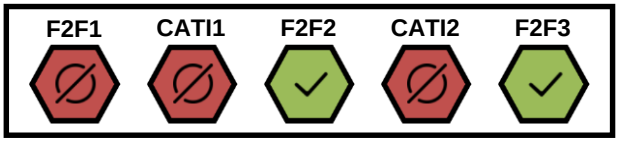
- med1200: I have a hard time concentrating in class due to my cell phone use.
- med1201: I constantly check my cell phone so as not to miss anything.
- med1202: I use my cell phone longer than I had intended.
- med1203: My parents tell me that I use my cell phone too much.

References

Problematic Smartphone Use:

Montag, C. (2018). *Homo Digitalis*. Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-20026-8

Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: development and validation of a short version for adolescents. *PloS one*, *8*(12). https://doi.org/10.1371/journal.pone.0056936



Career, Labor Market Attainment, and Welfare

Job Autonomy

Summary

Job autonomy can generally be referred to as the extent to which a job allows freedom, independence, and choice to schedule work, to make decisions, and to choose the methods used to perform tasks (Morgeson & Humphrey, 2006). In *TwinLife*, job autonomy was assessed with three items from the project of the university in Bielefeld "From Heterogeneities to Inequalities – Interactions Between Capabilities in Work and Private Life" (Abendroth et al., 2014). These items were translated and inspired by the Work Autonomy Scales (Breaugh, 1985, 1989). This construct was assessed for all employed participants in face to face wave two and face to face wave three (via CAPI).

Scales and items

Self-report – job autonomy: aut0101, aut0102, aut0103(i)

F2F2 + F2F2: Employment

"On a scale of 1 to 5, please tell me to what extent the following statements apply to your work situation."

Response format:

1	2	3	4	5
Does not apply at all	-	-	-	Applies completely

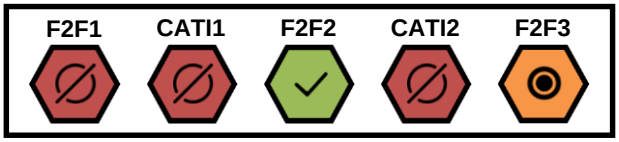
- aut0101: Within my working hours, I can decide for myself when I do which work tasks.
- aut0102: I can decide for myself how I carry out my work tasks.
- aut0103: Most of my work involves routine activities and I rarely learn anything new. (i)

References

Abendroth, A.-K., Melzer, S. M., Jacobebbinghaus, P., & Schlechter, F. (2014). *Methodenbericht Beschäftigten- und Partnerbefragung des Linked-Employer-Employee Panels (LEEP-B3) im Projekt B3: "Wechselwirkung zwischen Verwirklichungschancen im Berufs- und Privatleben"* [Methodological Report Employee and Partner Surveys of the Linked Employer- Employee Panel (LEEP-B3) in Project B3: "Interactions Between Capabilities in Work and Private Life"] (S. Liebig & J. Vompras, Eds.). DFG Research Center (SFB) 882 From Heterogeneities to Inequalities. https://pub.uni-bielefeld.de/download/2700763/2700861/SFB_882_TechnicalReport_06_B3_v2.pdf

Breaugh, J. A. (1985). The Measurement of Work Autonomy. *Human Relations*, *38*(6), 551–570. https://doi.org/10.1177/001872678503800604

Breaugh, J. A. (1989). The Work Autonomy Scales: Additional Validity Evidence. *Human Relations*, *42*(11), 1033–1056. https://doi.org/10.1177/001872678904201105



Political and Social Integration and Participation

Cultural Capital

Summary

Cultural capital is often described as indicators of symbolic and culture related wealth and is assumed to relate to educational and vocational chances (Bourdieu, 1986). Cultural capital was introduced in face to face wave two of *TwinLife*. Items for cultural capital include the categories “embodied cultural capital”, “cultural involvement”, and “participation in high culture”. All categories of items were assessed via self-report in the PAPI module for participants aged 10 or older. “Participation in high culture” was also assessed as a parental report for children aged 5 to 9 in the CASI module. Items originate from the NEPS study (for more information regarding particular subscales, see Goßmann, 2018). However, in face to face wave three, only participation in high culture was measured.

Scales and items

Self-report:

Embodied cultural capital:

cul0201(r), cul0202(r), cul0203(r), cul0204(r), cul0205(r)[13]

F2F2: 10+
F2F3: Ø

“Do you have ... at home?”

Response format:

1	**2**
Yes	No
Recoding	
1	0

[13] In the original paper, two different scales for embodied cultural capital were assumed. Item selection in *TwinLife* does not allow for a calculation of two subscales. Therefore, we suggest considering an overall score, representing overall “embodied cultural capital” after carefully inspecting dimensionality and reliability of the overall scale empirically.

Cultural Possessions:

- cul0201: … classical literature, e.g. Goethe. (r)
- cul0203: … books of poems. (r)
- cul0205: … works of art, e.g. paintings. (r)

Educational Resources:

- cul0202: … a dictionary. (r)

Additional Item:

- cul0204: … a library card. (r)

Cultural involvement: cul0401(i), cul0402(i), cul0403(i), cul0404(i)

F2F2: 10+
F2F3: Ø

"In general, how often do you discuss the following things with others?"
Response format:

1	2	3	4	5
Daily	Several times per week	Once a week	Several times a month	Rarely or never

- cul0401: About political or social issues. (i)
- cul0402: About books. (i)
- cul0403: About works of art or art in general. (i)
- cul0404: About movies or TV shows. (i)

Participation in high culture: cul0501, cul0503, cul0504

F2F2: 10+
F2F3: 11+

"Now we'd like to move on to other activities that you can do in your free time. It doesn't matter here whether you carried out this activity with someone else or alone. How often have you done the following in the past 12 months?"

Response format:

1	2	3	4	5
Never	Once	2 to 3 times	4 to 5 times	More than 5 times

- cul0501: Been to a museum or art exhibition.
- cul0503: Been to the opera, ballet, or classical concert.
- cul0504: Been to the theater.

Additional Items:

- cul0502: Been to the movies.
- cul0505: Been to a rock or pop concert.

Parental report:

F2F2: -9
F2F3: Ø

Participation in high culture: cul0501(t/u/s), cul0503(t/u/s), cul0504(t/u/s)

"Now we would like to move on to the other activities that you can do in your free time. How many times did <Name of child> participate in the following activities in the past 12 months?"

Response format:

1	2	3	4	5
Never	Once	2 to 3 times	4 to 5 times	More than 5 times

- cul0501(t/u/s): Been to a museum or an art exhibition.
- cul0503(t/u/s): Been to a (children's) opera, ballet, or classical concert.
- cul0504(t/u/s): Been to a (children's) theater.

Additional Items:

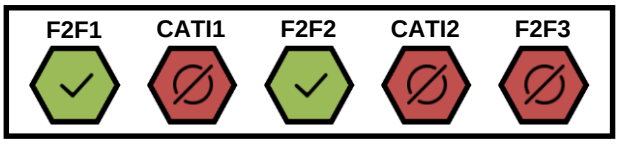
- cul0502(t/u/s): Been to the movies.
- cul0505(t/u/s): Been to a rock or pop concert.

References

Cultural capital:

National Educational Panel Study (NEPS): Starting Cohort 4: 9th Grade (SC4) Waves 1 and 2 Questionnaires (SUF Version 1.1.0). https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/SC4/1-1-0/SC4_1-1-0_Q_w1_2_en.pdf

Goßmann, F. (2018). *Measuring Cultural Capital in the NEPS* (NEPS Survey Paper No. 48). Leibniz Institute for Educational Trajectories, National Educational Panel Study. https://www.neps-data.de/Portals/0/Survey%20Papers/SP_XLVIII.pdf



Social Trust

Summary

Interpersonal trust can be defined as “an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon” (Rotter, 1967, p. 651). The items for social trust were taken from the SOEP survey (Richter et al., 2017). Social trust was part of the CASI for participants older than 15 in face to face wave one and in the CAPI for participants older than 13 years of age in the face to face wave two interview.

Scales and items

“What is your opinion on the following three statements? Please answer using the following scale.”

Social Trust – Self-Report: net0100, net0101(i), net0102(i)

F2F1: 15+
F2F2: 13+

Response format:

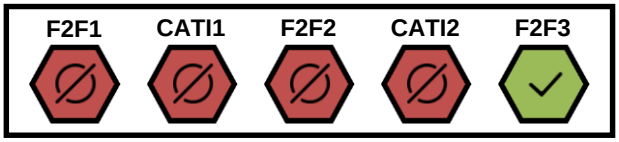
	1	2	3	4
F2F1	Completely disagree	--	--	Completely agree
F2F1	Completely disagree	Rather disagree-	Rather agree	Completely agree

- net0100: Overall, one can trust people.
- net0101: Nowadays one cannot rely on anyone. (i)
- net0102: When dealing with strangers, it is better to be cautious before trusting them. (i)

References

Social Trust:

Richter, D., Rohrer, J., Metzing, M., Nestler, W., Weinhardt, M., & Schupp, J. (2017). SOEP scales manual (updated for SOEP-Core v32. 1). *SOEP Survey Papers (No. 423).* DIW/SOEP. https://www.econstor.eu/bitstream/10419/156115/1/882143492.pdf



Right-Wing Authoritarianism

Summary

Right-Wing Authoritarianism can be characterized as a construct consisting of three aspects: Conventionalism, authoritarian aggression, and submission (Altemeyer & Altemeyer, 1981). It was introduced in face to face wave three for participants aged 13 years or older. The items were taken from the instrument RWA³D (Right-Wing Authoritarianism Scale – German Version; Funke, 2005; Hebler et al., 2014) and were part of the CASI module.

Scales and items

"Now we would like to know how much you agree with the following statements."

Response format:

1	2	3	4	5
Disagree very strongly	-	Neither	-	Agree very strongly

F2F3: 13+

RWA³D - Self report: rwa0100, rwa0101(i), rwa0102(i), rwa0103

- rwa0100: What our country really needs instead of more "civil rights" is a good stiff dose of law and order.
- rwa0101: There is no crime that would justify capital punishment. (i)
- rwa0102: It is good that nowadays young people have greater freedom "to do their own thing" and to protest against things they don't like. (i)[14]
- rwa0103: The real keys to the "good life" are obedience, discipline, and virtue.

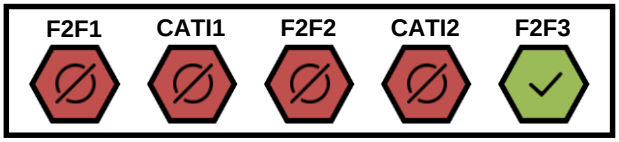
[14] In the original scale, the exact English wording was "It is good that nowadays young people have greater freedom "to make their own rules" and to protest against things they don't like."

References

RWA^{3}D:

Funke, F. (2005). The dimensionality of right-wing authoritarianism: Lessons from the dilemma between theory and measurement. *Political Psychology*, *26*(2), 195-218. https://doi.org/10.1111/j.1467-9221.2005.00415.x

Hebler, M., Booh, A. T., Wieczorek, S., & Schneider, J. F. (2014). Right-Wing Autoritarismus. *Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS)*. https://doi.org/10.6102/zis81



Social Dominance Orientation

Summary

Social Dominance Orientation can be defined as “the extent to which one desires that the one’s in-group dominate and be superior to out-groups” (Pratto et al., 1994, p. 742). In *TwinLife*, a German adaption (Kämpfe, 2002) of Pratto et al.’s items for measuring Social Dominance Orientation (1994) was used. It was assessed the first time in face to face wave three for participants aged 13 or older (via PAPI).

Scales and items

“Now we would like to know how much you agree with the following statements.”

Response format:

1	2	3	4	5
Disagree very strongly	-	Neither	-	Agree very strongly

SDO – Self report: sdo0100, sdo0101, sdo0102(i), sdo0103

F2F3: 13+

- sdo0100: To get ahead in life, it is sometimes necessary to use others for oneself.[15]
- sdo0101: It is basically true that some groups are better off than others.[16]
- sdo0102: We would have fewer problems if we treated people more equally. (i)
- sdo0103: If some groups kept to themselves, we would have fewer problems.[17]

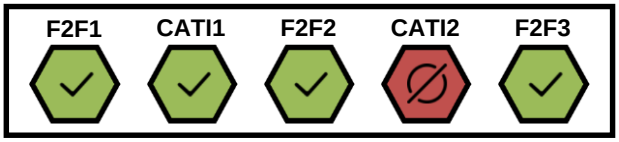
[15] In the original scale, the item-wording was “To get ahead in life, it is sometimes necessary to step on other groups”, however in the German adaption of the scale, the meaning was slightly altered.
[16] In the original scale, the item-wording was “It’s probably a good thing that certain groups are at the top and other groups are at the bottom.”, however in the German adaption of the scale, the meaning was slightly altered.
[17] In the original scale, the item-wording was “If certain groups stayed in their place, we would have fewer problems.”, however in the German adaption of the scale, the meaning was slightly altered.

References

SDO:

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67,* 741–763. https://doi.org/10.1037/0022-3514.67.4.741

Kämpfe, N. (2002). *Persönlichkeit, soziale Einstellungen und Fremdenfeindlichkeit: Eine empirische Untersuchung mit Selbst- und Bekanntenеinschätzungen* [Personality, social attitudes, and xenophobia: A study using self- and peer report] (Unpublished diploma thesis). Friedrich-Schiller-University Jena, Germany.



Subjective Perception of Quality of Life

Global Life Satisfaction

Summary

According to Veenhoven (1996), global life satisfaction can be characterized as “the degree to which a person positively evaluates the overall quality of his/her life as-a-whole.” (p. 17). In *TwinLife*, global life satisfaction was assessed using the “Satisfaction with Life Scale” (SWLS; Diener et al., 1985) as well as using an adapted version for children (SWLS-C; Gadermann et al., 2010). The construct was assessed for every participant aged 10 or older (F2F3: aged 11 or older). Global life satisfaction was assessed in face to face wave one (via CASI), two and three (via PAPI), and the first telephone interview (via CATI).

Scales and items

“In the following, we would like to know how satisfied you are with your life in general.”

Response format:

1	2	3	4	5
Disagree strongly	Disagree	Neither denial nor approval	Agree	Agree strongly

SWLS-C – Self-report: gls0600, gls0700, gls0800, gls0900, gls1000

F2F1 + CATI1 + F2F2: 10-15
F2F3: 11-16

- gls0600: In most ways, my life is close to the way I would want it to be.
- gls0700: The things in my life are excellent.
- gls0800: I am happy with my life.
- gls0900: So far, I have gotten the important things I want in life.
- gls1000: If I could live my life over, I would have it the same way.

SWLS – Self-report: gls0100, gls0200, gls0300, gls0400, gls0500

F2F1 + CATI1 + F2F2: 16+
F2F3: 17+

- gls0100: In most ways my life is close to my ideal.
- gls0200: The conditions of my life are excellent.
- gls0300: I am satisfied with my life.
- gls0400: So far, I have gotten the important things I want in life.
- gls0500: If I could live my life over, I would change almost nothing.

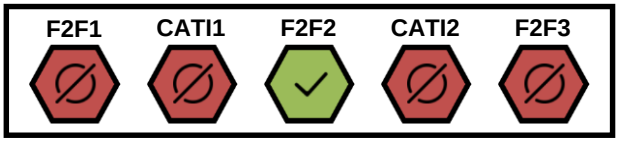
References

SWLS:

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71–75. https://doi.org/10.1207/s15327752jpa4901_13

SWLS-C:

Gadermann, A. M., Schonert-Reichl, K. A., & Zumbo, B. D. (2010). Investigating validity evidence of the Satisfaction with Life Scale adapted for children. *Social Indicators Research*, *96*(2), 229–247. https://doi.org/10.1007/s11205-009-9474-1



Optimism

Summary

Scheier und Carver (1985) defined dispositional optimism as a trait that is characterized by a stable and generalized tendency to expect positive (or negative) outcomes in the future. In *TwinLife*, a shortened version of the German translation of the Life Orientation Test (LOT; Glaesmer et al., 2008) was used for participants older than 9 years of age. Optimism was assessed in the PAPI module in face to face wave two.

Scales and items

Self-report - LOT-R: lot0100, lot0101, lot0102

F2F2: 10+

"To what extent do you think the following statements apply?"

Response format:

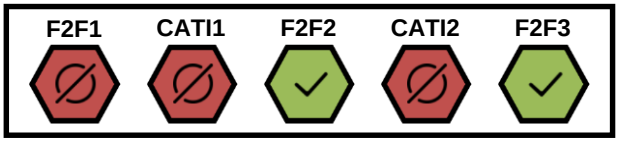
1	2	3	4	5
Does not apply at all	Does not really apply	Partly applies/partly does not apply	Slightly applies	Completely applies

- lot0100: In uncertain times, I usually expect the best.
- lot0101: I am always optimistic about my future.
- lot0102: Overall, I expect more good thing to happen to me than bad.

References

LOT-R:

Glaesmer, H., Hoyer, J., Klotsche, J., & Herzberg, P. Y. (2008). Die deutsche Version des Life-Orientation Tests (LOT-R) zum dispositionellen Optimismus und Pessimismus [The German version of the Life-Orientation Test (LOT-R) on dispositional optimism and pessimism]. *Zeitschrift Für Gesundheitspsychologie*, *16*(1), 26–31. https://doi.org/10.1026/0943-8149.16.1.26



Burden and Stress

Burden and stress related to parenthood

Summary

Parental burden can also be labeled as parenting stress and “can be defined as the aversive psychological reaction to the demands of being a parent.” (Deater-Deckard, 1998, p. 315). In *TwinLife*, this construct was assessed using items of the “Eltern-Belastungs-Inventar” [Parental Stress Inventory], a German version of the parenting stress index (Tröster, 2011). All participants aged 16 or older who had children on their own were asked to fill in these questions via PAPI. This construct was part of the survey in face to face wave two and three.

Scales and items

Self-report - EBI: ebi0100, ebi0101, ebi0102, ebi0103, ebi0104, ebi0105

F2F2: Own children & 16+
F2F3: Own children & 17+

“When raising children there are certainly times when increased stresses and strains occur, which are very challenging for you as a parent. What is your experience of these multiple demands and how do they affect your personal lifestyle?”

Response format:

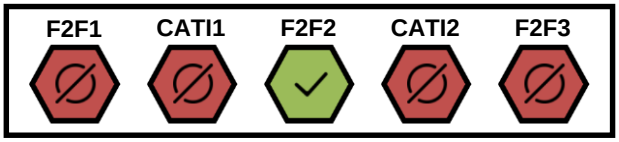
1	2	3	4	5
Does not apply at all	Mostly does not apply	Not sure	Mostly applies	Totally applies

- ebi0100: I sometimes feel restricted by my responsibility as a mother/father.
- ebi0101: The children have caused some problems in my relationship.
- ebi0102: In some situations, I wished I could better understand what my children were going through.
- ebi0103: It saddens me when I realize that I have reacted to my children irritably.
- ebi0104: Some aspects of raising my child have been harder than I expected.
- ebi0105: Since I have been a mother/father, I have had fewer opportunities to meet my friends and make new friends.

References

EBI:

Tröster, H. (2011). *Eltern-Belastungs-Inventar: EBI; deutsche Version des Parenting Stress Index (PSI) von RR Abidin*. *[German version of the Parenting Stress Index (PSI) by RR Abidin.]* Hogrefe.



Stress regulation and coping

Summary

One common conceptualization of stress regulation or coping is “changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). In the *TwinLife* study, coping was assessed differently depending on the participants’ age. For participants aged 16 or older, items from the “Coping Inventory for Stressful Situations” (CISS; Endler & Parker, 1999) were used. These questions were asked in the PAPI module. Participants aged 5 to 15 were asked to fill in items adapted from the “Stressverarbeitungsfragebogen nach Janke und Erdmann angepasst für Kinder und Jugendliche” [Stress processing questionnaire according to Janke and Erdman adapted for children and adolescents] (SVK-KJ; Hampel et al., 1997) either in the CAPI module (when aged under 10) or the PAPI module (when aged 10 or older). The chosen items of the SVK-KJ correspond with the items of the CISS. Coping was part of the questionnaire of the second face to face wave of *TwinLife*.

Scales and items

Self- report – SVF-KJ

F2F2: -15

“When other kids put pressure on me and I am very nervous, then…”

Response format:

1	2	3	4	5
Definitely not	Mostly not	Maybe	Mostly yes	Definitely

Self-control / task orientation: svk0100, svk0103, svk0106

- svk0100: … I make a plan for how to solve the problem.
- svk0103: … I try to find out why it’s like that.
- svk0106: … I think about what I can do.

Emotional coping: svk0101, svk0104, svk0107

- svk0101: … the situation keeps going through my head.
- svk0104: … everything I do seems pointless.
- svk0107: … I would rather avoid it.

Distraction: svk0102, svk0105, svk0108

- svk0102: …I read something I enjoy.
- svk0105: …I play something.
- svk0108: … I get really comfy.

Self- report – CISS

F2F2: 16+

"Various types of behavior that people can use to respond to difficult, critical, or challenging events are listed below. Please indicate how well these statements describe how you deal with such events."

Response format:

1	2	3	4	5
Does not apply at all	Mostly does not apply	Not sure	Mostly applies	Totally applies

Task orientation: cis0100, cis0103, cis106

- cis0100: I think about the event and learn from my mistakes.
- cis0103: I take corrective action immediately.
- cis0106: I get control of the situation.

Emotional coping: cis0101, cis0104, cis0107

- cis0101: I worry about what I should do.
- cis0104: I blame myself for not knowing what to do.
- cis0107: I feel anxious about not being able to cope.

Distraction: cis0102, cis0105, cis0108

- cis0102: I visit a friend.
- cis0105: I buy myself something.
- cis0108: I go out for a snack or meal.

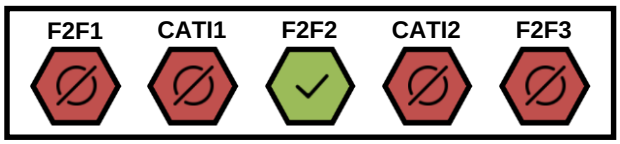
References

SVF-KJ:

Hampel, P., Petermann, F., & Dickow, B. (1997). *Stressverarbeitungsbogen von Janke und Erdmann angepasst für Kinder und Jugendliche (SVF-KJ)*. *[Stress processing questionnaire according to Janke and Erdman adapted for children and adolescents]* Hogrefe.

CISS:

Endler, N. S., & Parker, J. D. A. (1999). *Coping Inventory for Stressful Situations (CISS): Manual*. Multi-Health Systems.



Locus of control

Summary

Locus of control can be defined as “the extent to which one attributes valued outcomes or reinforcement to either internal or external circumstances” (van Liew, 2013, p. 74). In the *TwinLife* study, the items to assess locus of control were adapted from the SOEP study (Goebel et al., 2019). There were two different variants of the questionnaire with an adapted variant for participants aged 5 to 15. These questions were assessed either via CAPI (participants aged 5 to 9) or via PAPI (participants aged 10 or older). Locus of control was part of the survey in face to face wave two.

Scales and items

Self- report – Version 1 – Younger Participants

F2F2: -15

“To what degree do you personally agree with the following statements?”
Response format:

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

Internal locus: loc0100, loc0102

- loc0100: Whether I am elected class representative depends mainly on me and what I am able to do.
- loc0102: How many friends I have depends on me and my behavior.

External locus: loc0101, loc0103

- loc0101: Even though I try very hard, I rarely get what I want.
- loc0103: Although I am good, others rarely take me seriously.

Self-report – Version 2 – Older Participants

F2F2: 16+

"To what extent do you agree with the following statements?"

Response format:

1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

Internal locus: loc0200, loc0202

- loc0200: How my life goes depends on me.
- loc0202: One has to work hard in order to succeed.

External locus: loc0201, loc0203

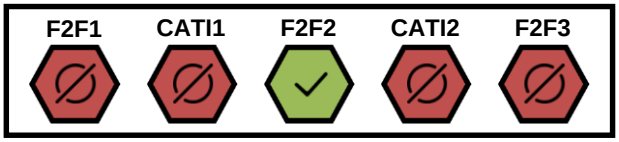
- loc0201: I frequently have the experience that other people have a controlling influence over my life.
- loc0203: The opportunities that I have in life are determined by the social conditions.

References

Locus of control:

The German Socio-Economic Panel Study (SOEP): SOEP Core Study Individual 2010. https://www.diw.de/documents/dokumentenarchiv/17/diw_01.c.369775.de/soepfrabo_personen_2010_en.pdf

Richter, D., Rohrer, J., Metzing, M., Nestler, W., Weinhardt, M., & Schupp, J. (2017). SOEP scales manual (updated for SOEP-Core v32. 1). *SOEP Survey Papers (No. 423).* Berlin: DIW/SOEP. https://www.econstor.eu/bitstream/10419/156115/1/882143492.pdf



Life Goals

Summary

According to self-determination theory, life goals can be understood as intrinsic or extrinsic personal aspirations or aims that guide a person's actions (Deci & Ryan, 2008) and play an important role regarding several aspects of, for instance, subjective well-being such as life satisfaction (e.g., Headey, 2008; Hofer & Chasiotis, 2003). In the *TwinLife* study, life goals were assessed using five items adapted from the SOEP study (Goebel et al., 2019). These items were based on the work of Kluckhohn and Strodtbeck (1961), who developed a classification of goals and measures. The German translation was developed by Bielenski and Strümpel (1988). We complemented these questions by further asking how likely the participants consider the fulfilment of the respective goal. However, these further questions are not covered here, as their inclusion is not mandatory. This construct was assessed for participants aged 16 or older in the PAPI module in face to face wave two.

Scales and items

F2F2: 16+

Self-report

"How important are the following things for you personally today?"

Response format:

1	2	3	4
Not at all important	Less important	Important	Very important

Success: lgd0101, lgd0102, lgd0105

- lgd0101: Being able to afford to buy things for myself.
- lgd0102: Being successful in my career.
- lgd0105: Seeing the world and/or traveling extensively.

Family life: lgd0103, lgd0104

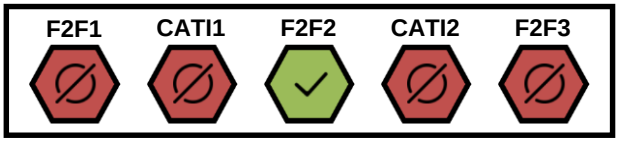
- lgd0103: Having a happy marriage / relationship.
- lgd0104: Having children.

References

Life goals:

Bielenski, H. & Strümpel, B. (1988). *Eingeschränkte Erwerbsarbeit bei Frauen und Männern. Fakten - Wünsche - Realisierungschancen. [Restricted gainful employment among women and men. Facts - wishes - chances of realisation.]* Edition Sigma.

The German Socio-Economic Panel Study (SOEP): SOEP Core Study Individual questionnaire 2012. https://www.econstor.eu/bitstream/10419/100687/1/795572875.pdf



Sensory Processing Sensitivity

Summary

Sensory processing sensitivity is proposed to be a trait involving a deeper cognitive processing of stimuli that is driven by higher emotional reactivity (Aron et al., 2012). In the *TwinLife* study, two versions of questions were used to operationalize sensory processing sensitivity. The Highly Sensitive Child Scale (HSC; Pluess et al., 2018) was adapted for participants aged 10 to 15 and the Highly Sensitive Person Scale for older participants (HSP; Aron & Aron, 2013). This construct was assessed in the PAPI module in face to face wave two.

Scales and items

Self-report – HSC

F2F2: 10-15

"Please tell us, how well the following statements describe you."

Response format:

1	2	3	4	5	6	7
Does not apply to me at all	-	-	-	-	-	Applies to me perfectly

Ease of excitation: sps0102, sps0104

- sps0102: I get nervous when I have to do a lot in little time.
- sps0104: I find it unpleasant to have a lot going on at once.

Aesthetic sensitivity: sps0101, sps0103

- sps0101: Some music can make me really happy.
- sps0103: I love nice smells.

Low sensory threshold: sps0100, sps0105

- sps0100: I don't like watching TV programs that have a lot of violence in them.
- sps0105: Loud noises make me feel uncomfortable.

Self-report – HSP-SF[18]

F2F2: 16+

"How well do the following statements apply to you personally?"

Response format:

1	2	3	4	5	6	7
Does not apply to me at all	-	-	-	-	-	Applies to me perfectly

Ease of excitation: sps0202, sps0204

- sps0202: I get rattled when I have a lot to do in a short amount of time.
- sps0204: I find it unpleasant to have a lot going on at once.

Aesthetic sensitivity: sps0201, sps0203

- sps0201: I am deeply moved by the arts or music.
- sps0203: I notice and enjoy delicate or fine scents, tastes, sounds, works of art.

Low sensory threshold: sps0200, sps0205

- sps0200: I make a point to avoid violent movies and TV shows.
- sps0205: I am bothered by intense stimuli, like loud noises or chaotic scenes.

References

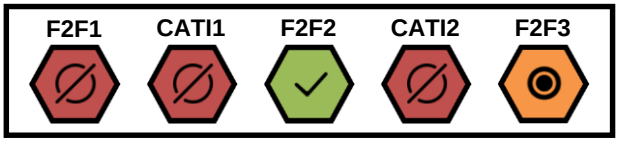
HSC:

Pluess, M., Assary, E., Lionetti, F., Lester, K., Krapohl, E., Aron, E. N., & Aron, A. (2018). Environmental sensitivity in children: Development of the Highly Sensitive Child Scale and identification of sensitivity groups. *Developmental Psychology*, *54*(1), 51-70. https://doi.org/10.1037/dev0000406

HSP-SF:

Aron, E. N., & Aron, A. (2013). Tips for SPS Researchers. http://hsperson.com/pdf/Tips_for_SPS_Researchers_Nov21_2013.pdf

[18] The question-based style of the original questionnaire was reformulated to a statement-based questionnaire in *TwinLife*.



Bullying

Summary

Bullying can be defined as a distinct form of peer aggression consisting of negative behavior that is intended and recurring and typically involves an imbalance of power between victim and perpetrator (Olweus, 1993). In *TwinLife*, the Gatehouse Bullying Scale (GBS; Bond et al., 2007) was used to assess bullying experiences in a translated and adapted form[19] for participants aged 10 or older in face to face wave two (F2F3: 11 or older). The GBS was assessed in the CASI module in face to face wave two and three. Participants who did not go to school anymore had to rate their bullying experiences retrospectively (only in F2F2). For participants between 5 and 9 years of age (F2F3: between 5 and 10 years of age), parts of the "Bullying- und Viktimisierungs-Fragebogen für Kinder" [Bullying- and victimization questionnaire for children] (BVF-K, Marées & Petermann, 2009) were used. We selected two items of the scale "direct victimization" and two items of the scale "indirect victimization", which corresponds to the items from the GBS. The BVF-K was assessed in the CAPI module in face to face wave two. Questions on bullying always consisted of a frequency item and a request on the burden of these experiences (if the frequency item was not answered with "never").[20]

Scales and items:

Self-report - GBS

Frequency: bul0100, bul0200, bul0300, bul0400

Response format:

1	2	3	4
Never	Less than once a week	About once a week	Most days

[19] The GBS was adapted by combining the query whether a situation was experienced or not with the frequency query. Therefore, the frequency scale we used is shifted by one compared to the original scale and should be recoded if a direct comparison is desired. For notes on possible classification based on the GBS' frequency items, see Bond et al. (2007).

[20] We recommend for both scales, the GBS and the BVF-K, to build composite scales for frequency and burden separately, and to combine them if wished. More information on scaling can be found at Hamburger, Basile, & Vivolo (2011).

Version 1 – Current frequency of victimization

"In the following you will be asked some questions about events you may know from school. How often has someone bullied or taunted you lately?"

F2F2: School attendance & 10+
F2F3: School attendance & 11+

Teasing:

- bul0100: How often has anyone teased you or called you names recently?

Rumors:

- bul0200: How often has anyone spread rumors about you recently? (This includes rumors on the internet.)

Deliberate exclusion/social isolation:

- bul0300: How often have you been deliberately left out of things recently?

Physical threats/violence:

- bul0400: How often have you been threatened physically or actually hurt by another student recently?

Version 2 – Past frequency of victimization

"The following questions refer to the time when you were still at school. How often did someone bully or taunt you during your school days?"

F2F2:
No School attendance & 10+
F2F3: Ø

Teasing:

- bul0110: How often has anyone teased you or called you names during your school days?

Rumors:

- bul0210: How often has anyone spread rumors about you during your school days? (This includes rumors on the internet.)

Deliberate exclusion/social isolation:

- bul0310: How often have you been deliberately left out of things during your school days?

Physical threats/violence:

- bul0410: How often have you been threatened physically or actually hurt by another student during your school days?

Burden:

Current burden: bul0101, bul0201, bul0301, bul0401

Retrospective burden (F2F2 only): bul0111, bul0211, bul0311, bul0411

F2F2: 10+
F2F3: School attendance & 11+

Response format:

1	2	3
Not at all	A little	I was quite upset

Teasing:

- bul0101/bul0111: How upsetting was it when you were teased?

Rumors:

- bul0201/bul0211: How upsetting were the rumors?

Deliberate exclusion/social isolation:

- bul0301/bul0311: How upsetting was it being left out of things?

Physical threats/violence:

- bul0401/bul0411: How upsetting was it being threatened or hurt?

Self-report - BVF-K

F2F2: -9
F2F3: -10

"I will now ask you a few questions about your life in kindergarten / school. It is about whether you sometimes have trouble or arguments with other children.
The questions are about your life in the kindergarten/ in school, namely about the time since the last big holidays. So, you should always consider whether what I ask has happened since the last big holiday."

Frequency: bul0500, bul0600, bul0700, bul0800

Response format:

1	2	3
Never	Occasionally	Very often

Direct Victimization:

Teasing

- bul0500: How often do other kids yell at you or call you names?

Physical threats/violence

- bul0600: How often do other children deliberately hurt you?

Indirect Victimization:

Deliberate exclusion/social isolation

- bul0700: How often do other children not let you play with them?

Rumors

- bul0800: How often does another child say nasty things about you so that the others don't like you anymore?

Burden: bul0501, bul0601, bul0701, bul0801

Response format:

1	2	3
Not bad at all	Slightly bad	Quite bad

Direct Victimization:

Teasing

- bul0501: How bad is it for you when you get yelled at or insulted by other children?

Physical threats/violence

- bul0601: How bad is it for you if other children deliberately hurt you?

Indirect Victimization:

Deliberate exclusion/social isolation

- bul0701: How bad is it for you if other children won't let you play with them?

Rumors

- bul0801: How bad is it for you when another child says nasty things about you so that the others don't like you anymore?

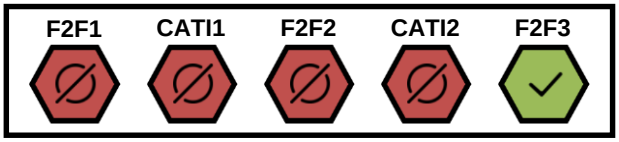
References

GBS:

Bond, L., Wolfe, S., Tollit, M., Butler, H., & Patton, G. (2007). A comparison of the Gatehouse Bullying Scale and the Peer Relations Questionnaire for students in secondary school, *Journal of School Health, 77*(2), 75–79. https://doi.org/10.1111/j.1746-1561.2007.00170.x

BVF-K:

Marées & Petermann (2009). Der Bullying- und Viktimisierungs-Fragebogen für Kinder (BVF-K): Konstruktion und Analyse eines Verfahrens zur Erhebung von Bullying im Vor- und Grundschulalter [The bullying and victimization questionnaire for children (BVF-K): construction and analysis of an instrument for the assessment of bullying in kindergarten and primary school]. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 58*(2), 96-109. https://doi.org/10.13109/prkk.2009.58.2.96



Emotional Impairment

Worrying – Generalized Anxiety Disorder

Summary

Generalized anxiety disorder (GAD) is characterized in its core features by the presence of intense anxiety and worries about a broad set of topics or events that are hard to control (APA, 2013). In *TwinLife*, items on GAD, originating from the GAD-7 (Spitzer et al., 2006), were introduced in wave three for participants aged 11 or older. It was part of the PAPI module. These items were also part of the first COVID supplementary questionnaire (COV1), for all participants older than 16 (emi0112, emi0113).

Scales and items

GAD – self report (Participants aged 11 or older): emi0102, emi0103

F2F3: 11+

"During the last two weeks, how often did you feel affected by the following complaints?"

Response format[21]:

1	2	3	4
Not at all	On single days	More than half of the days	Almost every day

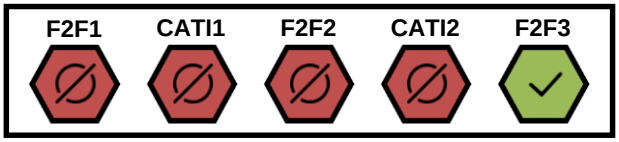
- emi0102: Nervousness, anxiety, or tension.
- emi0103: Not being able to stop or control worries.

References

GAD-7:

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of internal medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

[21] The response format was altered to fit the needs of the TwinLife study.



Injustice Sensitivity

Summary

Injustice sensitivity refers to the ability to perceive injustice and the intensity with which people react to it (Schmitt et al., 2009). It can be perceived from the perspective of a victim, observer, beneficiary, or perpetrator (Schmitt et al., 2010). In the *TwinLife* study, sensitivity to injustice was assessed with three questions. Two questions measuring victim sensitivity were adapted from the "Ungerechtigkeitssensibiliät-Skalen-8" [The Injustice Sensitivity Scales-8] (USS-8, Beierlein et al., 2012). One question was taken from the International Social Survey Program and translated into German and measures perceptions about types of society and social position. These questions were collected via self-report in the CASI/CAWI module.

Scales and items

USS-8 - Victim sensitivity – Self report: ugs0100, ugs0101

F2F3: 13+

"Now we would like to know what you think about the following statements."

Response format:

1	2	3	4	5	6
Doesn't apply at all	-	-	-	-	Applies completely

- ugs0100: It annoys me when others are undeservedly better off than I am. [22]
- ugs0101: It bothers me when I have to work hard for things that fall into other people's laps.[23]

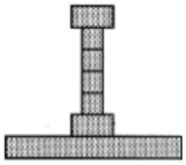
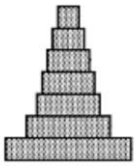
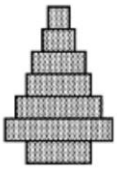
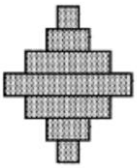
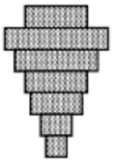
Social structure – Self report: ugs0200

F2F3: 14+

"Societies can differ in how wealth and resources are distributed among social classes. What do you think: Which illustration most closely represents the social structure of our country?"

[22] In the English original, the exact item wording was "It makes me angry when others are undeservingly better off than me."
[23] In the English original, the exact item wording was "It worries me when I must work hard for things that come easily to others."

Response format:

1	2	3	4	5
				
Picture A: A small elite at the top, very few people in the middle and the great mass of people at the bottom.	Picture B: A society like a pyramid with a small elite at the top, more people in the middle, and most at the bottom.	Picture C: A pyramid except that just a few people are at the bottom.	Picture D: A society with most people in the middle.	Picture E: Many people near the top, and only a few near the bottom.

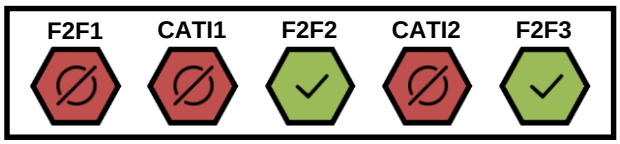
References:

USS-8:

Beierlein, C., Baumert, A., Schmitt, M., Kemper, C., Kovaleva, A., & Rammstedt, B. (2012). Kurzskalen zur Messung der Ungerechtigkeitssensibilität: Die Ungerechtigkeitssensibiliät-Skalen-8 (USS-8) [Short Scales for Measuring Injustice Sensitivity: The Injustice Sensitivity Scales-8 (USS-8)]. GESIS-Working Papers, 21, 1-27. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-312112

Social Structure:

ISSP Research Group (2017). International Social Survey Programme: Social Inequality IV - ISSP 2009. *GESIS Data Archive, Cologne. ZA5400 Data file Version 4.0.0.* https://doi.org/10.4232/1.12777



Physical and Psychological Health

Depression

Summary

Depressive symptoms can be manifold, but among them the most common are a lowered mood and a lack of energy or interest (Degkwitz et al., 1975). In *TwinLife*, the items for depression were inspired by the German adaption of Becks Depression Inventory – Fast Screen (BDI-FS; Beck et al., 2000). However, the response format was drastically changed. This questionnaire was introduced in face to face wave two and was part of the PAPI module for participants aged 10 years or older. It was assessed again in face to face wave three as part of the PAPI module for participants aged 11 years or older.

Scales and items

F2F2: 10+
F2F3: 11+

Self-report – BDI-FS: bdi0100, bdi0101, bdi0102, bdi0103, bdi0104, bdi0105, bdi0106

“How often do these following statements apply to you in the last two weeks?”

Response format:

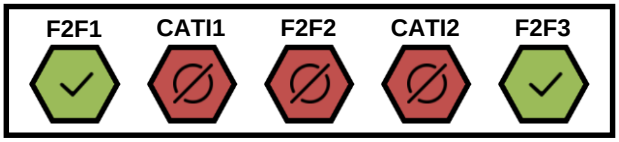
1	2	3	4
Never	-	-	Almost always

- bdi0100: I am sad.
- bdi0101: I am pessimistic about my future.
- bdi0102: I feel like a failure.
- bdi0103: I find it difficult to enjoy anything.
- bdi0104: I am disappointed in myself.
- bdi0105: I blame myself for mistakes and weaknesses.
- bdi0106: I think about hurting myself.

References

BDI - FS:

Beck, A. T., Steer, R. A., & Brown, G. K. (2000). *Manual for the BDI-Fast Screen for Medical Patients*. Psychological Corporation.



Psychopathology and Deviant Behavior

Internalizing Problem Behavior

Summary

Internalizing problems can be defined as behavioral patterns related to depression, anxiety, and somatic symptoms as well as social aspects such as withdrawal (Bolger & Patterson, 2001). In *TwinLife*, internalizing problems were assessed through scales adapted from the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998). Internalizing was assessed in face to face wave one[24] as a self-report for participants aged 10 or older (with slightly different wording depending on age) and as parental reports on participants aged 5 to 9 via CASI, as well as in face to face three as a self-report for participants aged 11 or older and as a parental report on participants aged 5 to 10.

Scales and items[25]

Self-report

"Please give your answers on the basis of how things have been for you over the last six months. To what extent do the following statements apply to you?"

Response format:

1	2	3
Does not apply at all	Partly applies	Applies completely

Emotional Symptoms: int0100, int0101, int0102, int0103, int0104

F2F1: 10+
F2F2: N
F2F3: 11+

- int0100: I get a lot of headaches, stomach- aches or sickness.
- int0101: I worry a lot.
- int0102: I am often unhappy, downhearted, or tearful.
- int0103: I am nervous in new situations. I easily lose confidence.
- int0104: I have many fears; I am easily scared.

[24] In face to face wave two, this construct was assessed only for new entrants.
[25] Please note: The values of the response categories are shifted by one compared to the original scale (0-2).

Problems with Peers – Version 1 – Younger Participants: int0105, int0106(i), int0107(i), int0108, int0109

F2F1: 10-17
F2F2: N
F2F3: 11-17

- int0105: I am usually on my own. I generally keep to myself.
- int0106: I have one good friend or more. (i)
- int0107: Other people my age generally like me. (i)
- int0108: Other children or young people pick on me or bully me.
- int0109: I get on better with adults than with people my own age.

Problems with Peers – Version 2 – Older Participants: int0105, int0106(i), int0107(i), int0110, int0111

F2F1: 18+
F2F2: N
F2F3: 18+

- int0105: I am usually on my own. I generally keep to myself.
- int0106: I have one good friend or more. (i)
- int0107: Other people generally like me. (i)
- int0110: I am very reserved; I work out things by myself. [26]
- int0111: Other people pick on me or bully me.

Parental Report

F2F1: -9
F2F2: N
F2F3: -10

"Please give your answers on the basis of the child's behavior over the last six months or this school year. <Name of child>…"

Response format:

1	2	3
Does not apply at all	Partly applies	Applies completely

Emotional Symptoms: int0100(t/u/s), int0101(t/u/s), int0102(t/u/s), int0103(t/u/s), int0104(t/u/s)

- int0100(t/u/s): … often complains of headaches, stomach-aches, or sickness.
- int0101(t/u/s): … has many worries, often seems worried.
- int0102(t/u/s): … is often unhappy, downhearted, or tearful.
- int0103(t/u/s): … is nervous or clingy in new situations, easily loses confidence.
- int0104(t/u/s): … has many fears, is easily scared.

[26] Additional item added in *TwinLife*.

Problems with Peers: int0105(t/u/s), int0106(t/u/s)(i), int0107(t/u/s)(i), int0108(t/u/s), int0109(t/u/s)

- int0105(t/u/s): … is rather solitary, tends to play alone.
- int0106(t/u/s): … has at least one good friend. (i)
- int0107(t/u/s): … is generally liked by other children. (i)
- int0108(t/u/s): … is picked on or bullied by other children.
- int0109(t/u/s): … gets on better with adults than with other children.

References

SDQ:

Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, *7*, 125–130. https://doi.org/10.1007/s007870050057

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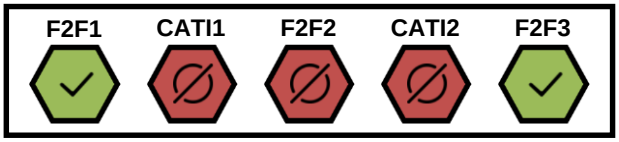

Externalizing Problem Behavior

Summary

Externalizing behaviors can be seen as actions characterized by defiance, impulsivity, disruptiveness, aggression, antisocial features, and overactivity (Achenbach & McConaughy, 1987). In *TwinLife*, externalizing problems were assessed through scales adapted from the strengths and difficulties questionnaire (SDQ; Goodman et al., 1998). It was assessed in face to face wave one[27] as a self-report for participants aged 10 or older (with slightly different wording depending on age) and as parental reports on participants aged 5 to 9 via CASI, as well as in face to face three as a self-report for participants aged 11 or older and as a parental report on participants aged 5 to10.

Scales and items[28]

Self-report

F2F1: 10+
F2F2: N
F2F3: 11+

"Please give your answers on the basis of how things have been for you over the last six months. To what extent do the following statements apply to you?"

Response format:

1	2	3
Does not apply at all	Partly applies	Applies completely

Hyperactivity: ext0100, ext0101, ext0102, ext0103(i), ext0104(i)

- ext0100: I am restless, I cannot stay still for long
- ext0101: I am constantly fidgeting or squirming.[29]
- ext0102: I am easily distracted; I find it difficult to concentrate.
- ext0103: I think before I do things. (i)
- ext0104: I finish the work I'm doing. My attention is good. (i)

[27] In face to face wave two, this construct was assessed only for new entrants.
[28] Please note: The values of the response categories are shifted by one compared to the original scale (0-2).
[29] Only for participants aged between 10 and 18.

Conduct Problems: ext0105, ext0106(i), ext0107, ext0108, ext0109

- ext0105: I get very angry and often lose my temper.
- ext0106: I usually do as I am told. (i)
- ext0107: I fight a lot. I can make other people do what I want.
- ext0108: I am often accused of lying or cheating.
- ext0109: I take things that are not mine from home, work/school or elsewhere.

Parental report[30]

F2F1: -9
F2F2: N
F2F3: -10

"Please give your answers on the basis of the child's behavior over the last six months or this school year. <Name of child>…"

Response format:

1	2	3
Does not apply at all	Partly applies	Applies completely

Hyperactivity: ext0100(t/u/s), ext0109(t/u/s), ext0101(t/u/s), ext0102(t/u/s)(i), ext0103(t/u/s)(i)

- ext0100(t/u/s): … is restless, overactive; cannot stay still for long.
- ext0109(t/u/s): … is constantly fidgeting or squirming.
- ext0101(t/u/s): … is easily distracted, concentration wanders.
- ext0102(t/u/s): ... thinks things out before acting. (i)
- ext0103(t/u/s): ... sees tasks through to the end, has good attention span. (i)

Conduct Problems: ext0104(t/u/s), ext0105(t/u/s)(i), ext0106(t/u/s), ext0107(t/u/s), ext0108(t/u/s)

- ext0104(t/u/s): ... often has temper tantrums or hot tempers.
- ext0105(t/u/s): ... is generally obedient, usually does what adults request. (i)
- ext0106(t/u/s): ... often fights with other children or bullies them.
- ext0107(t/u/s): ... often lies or cheats.
- ext0108(t/u/s): ... steals from home, school or elsewhere.

[30] Caution: Parental variable names do not correspond with variable names of the self-report.

References

SDQ:

Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, *7*, 125–130. https://doi.org/10.1007/s007870050057

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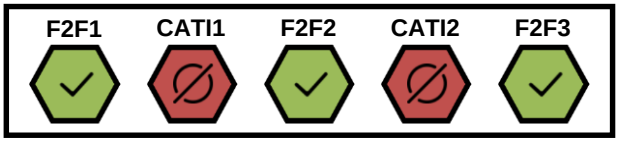

Deviant and Delinquent Behavior

Deviance

Summary

In addition to externalizing behaviors, a reformulated self-report version of the SDQ (Goodman et al., 1998) was used for participants aged 5 to 9 to assess deviance. This self-report contained items that are indicative for deviant child behavior. The items were assessed in the CAPI module in face to face wave one and two and in face to face wave three (but with different filtering).

Scales and items

Self-report

F2F1: -9
F2F2: -9
F2F3: -10

Response format:

1	2	3
Never	Occasionally	Very often

Hyperactivity: dev0100, dev0101(i), dev0102, dev0103

- dev0100: Would you say that you are never angry, sometimes angry, or very often angry?
- dev0101: Would you say that you never listen to your parents, sometimes listen to your parents, or very often listen to your parents? (i)
- dev0102: Would you say that you never have arguments with other children, sometimes have arguments with other children, or very often have arguments with other children?
- dev0103: Would you say that you never cheat or lie, sometimes cheat or lie, or very often cheat or lie?

References

SDQ:

Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, *7*, 125–130. https://doi.org/10.1007/s007870050057
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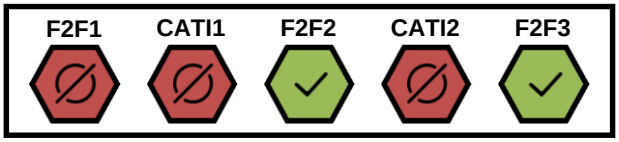


Environment

School Context

School climate / relationship to teachers

Summary

School climate refers to the quality and character of school life and can include norms, interpersonal relationships as well as structural characteristics (Cohen et al., 2009). In *TwinLife*, there was a focus on one aspect relevant for school climate, namely student teacher interaction. The items originate from the PISA survey (OECD, 2013). This construct was assessed via CAPI for school attending participants aged 13 or older in face to face wave two and three.

Scales and items

Self-report

F2F2 + F2F3: School attendance & 13+

Student teacher interaction: edu0700, edu0701, edu0800, edu0801, edu0802

“Now please think about the teachers at your school. To what extent do you agree with the following statements?”

Response format:

1	2	3	4
Completely disagree	Tend to disagree	Tend to agree	Completely agree

- edu0700: Students get along well with most teachers.
- edu0701: Most teachers are interested in students’ well-being.

“Now please think about the teachers you are taught by. To what extent do you agree with the following statements?”

Response format:

1	2	3	4
Completely disagree	Tend to disagree	Tend to agree	Completely agree

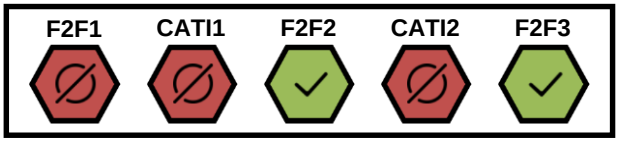
- edu0800: Most of my teachers treat me fairly.
- edu0801: If I need extra help, I will receive it from my teachers.
- edu0802: Most of my teachers really listen to what I have to say.

References

School context:

OECD. (2013). *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy*. https://doi.org/10.1787/9789264190511-en

Hertel, S., Hochweber, J., Mildner, D., Steinert, B., & Jude, N. (2014). *PISA 2009 Skalenhandbuch.* Waxmann. https://doi.org/10.25656/01:9554



Subjective burden at school

Summary

Subjective burden in school shall be defined as the subjective degree of burden, stress, or excessive demands by experiences in or expectations formulated by school. In the *TwinLife* study, pressure at school was assessed with an adapted set of questions, originating from the NEPS additional study in Thuringia (Blossfeld et al., 2011). It was assessed for school attending participants aged 13 or older in face to face wave two and three via CAPI.

Scales and items

Self-report: edu0901, edu0902, edu0903, edu0904, edu0905, edu0906, edu0907

"In the following I have a few questions about your day-to-day school life in general. Again, I would like to know from you to what extent you agree with the statements."

F2F2 + F2F3: School attendance & 13+

Response format:

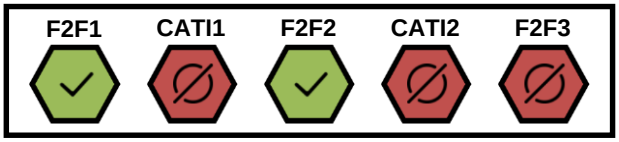
1	2	3	4
Completely disagree	Tend to disagree	Tend to agree	Completely agree

- edu0901: I often feel tense when I come home from school.
- edu0902: Sometimes I have difficulties falling asleep because I'm thinking about problems at school.
- edu0903: It happens that I react very irritably when people talk to me about school.
- edu0904: I find myself thinking about difficulties at school even during my free time.
- edu0905: After school I'm often exhausted.
- edu0906: The pressure at school is too high.
- edu0907: I don't have time for anything other than school.

References

Subjective burden:

NEPS - National Educational Panel Study (Ed.). (2012). *Additional Study Thuringia (TH) Waves 1 and 2, SUF Version 2.0.0 Questionnaires (SUF Version)*. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/TH/2-0-0/TH_2-0-0_Q_w1-2_en.pdf



Parental Behavior and Involvement

Parental involvement

Summary

Parental involvement can generally be defined as parental behavior to support their child's school progress (El Nokali et al., 2010). In *Twinlife*, the scales for parental involvement were inspired by the CoSMos project (see Spinath & Wolf, 2006) as well as an instrument by Lorenz and Wild (2007) and were assessed as child report on their parents in face to face wave one (via CASI) and face to face wave two (via CAPI). If the participants were older than 18 years, all items were reformulated to assess parental involvement retrospectively.

Scales and items

Child report

F2F1: School attendance & 9+
F2F2: School attendance & 10-20

"We would like to ask you a few questions about your parents and school. Please tick the answer whether the statements apply to your parents."

Response format:

1	2	3	4	5
Not correct at all	Rather not correct	Partly correct	Rather correct	Fully correct

Structure: inv0100, inv0101, inv0102

- inv0100: When I study for an exam, I know exactly how much effort my parents expect of me.
- inv0101: I know exactly what my parents expect of me in school.
- inv0102: When I come home with a class test, I know beforehand if my parents will be disappointed.

Emotional support: inv0103, inv0104, inv0105

- inv0103: My parents console me and help me when I have problems in school.
- inv0104: When I do not understand something in class, I can talk about it with my parents.
- inv0105: My parents are interested in what I have learned in school.

Autonomy: inv0106, inv0107, inv0108

- inv0106: When my parents help me with my studies, they encourage me to find the solution myself.
- inv0107: My parents explain to me that I can ask if I want to understand something better.
- inv0108: My parents encourage me to ask questions in class when I didn't understand something.

Control: inv0109, inv0110, inv0111

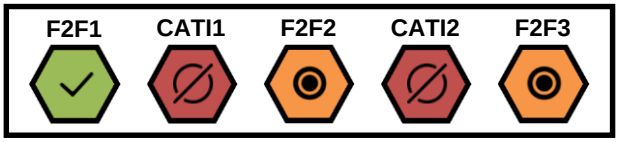
- inv0109: When I get a poor grade, my parents complain and demand that I work harder.
- inv0110: When I get a poor grade my parents threaten me with punishment (like no TV) if I do not promise to work hard in the future to improve my grades.
- inv0111: When I get a poor grade, my parents accuse me of thinking about too many other things and not enough about school.

References

Parental involvement:

Lorenz, F., & Wild, E. (2007). Parental involvement in schooling - results concerning its structure and impact on students´ motivation. In M. Prenzel & L. Allolio-Näcke (Eds.), *Studies on the educational quality of schools. The final report on the DFG Priority Programme* (pp. 299-316). Waxmann.

Spinath, F. M., & Wolf, H. (2006). CoSMoS and TwinPaW: Initial Report on two new German twin studies. *Twin Research and Human Genetics, 9*(6)*, 787-790.* https://doi.org/10.1375/twin.9.6.787



Parenting style

Summary

Parenting style can be defined as a constellation of attitudes or a pattern of parental authority towards the child, creating the emotional context for the expression of parent behavior (Leung & Tsang Kit Man, 2014). The scales for parenting style were inspired by pairfam (Huinink et al., 2011). Parenting style was assessed as parental self-report in face to face wave one (via CASI) and child report on their parents in face to face wave one (via CASI or CAPI for participants aged 9 or younger), two (via CASI for participants aged 10 to 15), and three (via CASI for participants aged 8 to 16). If the participants (or the participant's children) were older than 18 years, all items were reformulated to assess parenting style retrospectively. The children's version was kept strictly parallel to the parents' version.

Scales and items

Self-report of parents (F2F1 only)

F2F1: Twin's parents
F2F2: Ø
F2F3: Ø

"How often do the following things typically happen between you and [name of child]? / Please recall the time you lived together, or the time up to the age of 18 of [name of child]."

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very often

Emotional Warmth: par0100(t/u/s), par0101(t/u/s), par0102(t/u/s), par0103(t/u/s)

- par0100(t/u/s): You show/ed <name of child> with words and gestures that you like him/her.
- par0101(t/u/s): You praise/d <name of child>.
- par0102(t/u/s): You cheer/ed up <name of child> when he/she is sad.
- par0103(t/u/s): You give/gave <name of child> advice regarding his/her personal problems. [31]

[31] Additional item in *TwinLife*.

Psychological Control: par0104(t/u/s), par0105(t/u/s), par0106(t/u/s)[32]

- par0104(t/u/s): If <name of child> does something against your will, you punish him/her.
- par0105(t/u/s): You are/were disappointed and sad because <name of child> misbehaved.
- par0106(t/u/s): You make it clear to <name of child> that he/she is not to break the rules or question your decisions.

Negative Communication: par0107(t/u/s), par0108(t/u/s)

- par0107(t/u/s): You yell/ed at <name of child> when he/she did something wrong.
- par0108(t/u/s): You scold/ed <name of child> when you are/were angry at him/her.

Monitoring: par0109(t/u/s), par0110(t/u/s)

- par0109(t/u/s): When <name of child> makes/made new friends, you talk/ed to him/her about them.
- par0110(t/u/s): When <name of child> makes/made new friends, you get/got to know them soon thereafter.

Inconsistent Parenting: par0111(t/u/s), par0112(t/u/s)

- par0111(t/u/s): You threaten/ed <name of child> with a punishment but don't/didn't actually follow through.
- par0112(t/u/s): You find/found it hard to set and keep consistent rules for <name of child>.

[32] In the original, this scale was called "strict control". Items in this scale were altered to fit the needs of *TwinLife*.

Report of children on parents

F2F1: -9
F2F2: Ø
F2F3: Ø

Version 1 – Children

"How often do the following things usually happen between you and [name mother/father]?"

Response format:

1	2	3
Never	Occasionally	Very often

Emotional Warmth: pas0200(m/f/n/g), pas0201(m/f/n/g), pas0202(m/f/n/g), pas0203(m/f/n/g)

- pas0200(m/f/n/g): Your mother/your father shows you that he/she likes you.
- pas0201(m/f/n/g): Your mother/your father praises you.
- pas0202(m/f/n/g): Your mother/your father tries to cheer you up when you are sad.
- pas0203(m/f/n/g): Your father/mother gives you advice regarding your personal problems.[33]

Psychological Control: pas0204(m/f/n/g), pas0205(m/f/n/g), pas0206(m/f/n/g)

- pas0204(m/f/n/g): Your mother/your father punishes you when you do something against his/her will.
- pas0205(m/f/n/g): Your mother/your father is disappointed and sad because you misbehaved. [33]
- pas0206(m/f/n/g): Your mother/your father makes it clear to you that you are not to break the rules or question his/her decisions. [33]

Negative Communication: pas0207(m/f/n/g), pas0208(m/f/n/g)

- pas0207(m/f/n/g): Your mother/your father yells at you because you did something wrong.
- pas0208(m/f/n/g): Your mother/your father scolds you because he/she is angry at you.

[33] These items were not covered by the original questionnaire but introduced to guarantee strong correspondence to the parents' items.

Monitoring: pas0209(m/f/n/g), pas0210(m/f/n/g)

- pas0209(m/f/n/g): When you make new friends, your mother/your father talks to you about them. [33]
- pas0210(m/f/n/g): When you make new friends, your mother/your father gets to know them soon thereafter. [33]

Inconsistent Parenting: pas0211(m/f/n/g), pas0212(m/f/n/g)

- pas0211(m/f/n/g): Your mother/your father threaten you with a punishment but doesn't actually follow through. [33]
- pas0212(m/f/n/g): Your mother/your father finds it hard to set and keep consistent rules for you.[33]

Version 2 – Adolescents

F2F1: 10-17
F2F2: 10-15
F2F3: Ø

"How often do the following things usually happen between you and [name mother/father]?"

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very often

Emotional Warmth: pas0100(m/f/n/g), pas0101(m/f/n/g), pas0102(m/f/n/g), pas0103(m/f/n/g)

- pas0100(m/f/n/g): Your mother/your father shows you that he/she likes you.
- pas0101(m/f/n/g): Your mother/your father praises you.
- pas0102(m/f/n/g): Your mother/your father tries to cheer you up when you are sad.
- pas0103(m/f/n/g): Your father/mother gives you advice regarding your personal problems. [34]

Psychological Control: pas0104(m/f/n/g), pas0105(m/f/n/g), pas0106(m/f/n/g)

- pas0104(m/f/n/g): Your mother/your father punishes you when you do something against his/her will.
- pas0105(m/f/n/g): Your mother/your father is disappointed and sad because you misbehaved. [34]
- pas0106(m/f/n/g): Your mother/your father makes it clear to you that you are not to break the rules or question his/her decisions. [34]

Negative Communication: pas0107(m/f/n/g), pas0108(m/f/n/g)

- pas0107(m/f/n/g): Your mother/your father yells at you because you did something wrong.
- pas0108(m/f/n/g): Your mother/your father scolds you because he/she is angry at you.

Monitoring: pas0109(m/f/n/g), pas0110(m/f/n/g)

- pas0109(m/f/n/g): When you make new friends, your mother/your father talks to you about them. [34]
- pas0110(m/f/n/g): When you make new friends, your mother/your father gets to know them soon thereafter. [34]

Inconsistent Parenting: pas0111(m/f/n/g), pas0112(m/f/n/g)

- pas0111(m/f/n/g): Your mother/your father threaten you with a punishment but doesn't actually follow through. [34]
- pas0112(m/f/n/g): Your mother/your father finds it hard to set and keep consistent rules for you.[34]

[34] These items were not covered by the original questionnaire but introduced to guarantee strong correspondence to the parents' items.

Version 3 – Adult twin's retrospect report on parents

F2F1: 18+
F2F2: Ø
F2F3: Ø

Please think about the time when you were still living at home or the time until you turned 18. How often did the following things typically happen between you and [name of mother/father]?

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very often

Emotional Warmth: pas0100(m/f/n/g), pas0101(m/f/n/g), pas0102(m/f/n/g), pas0103(m/f/n/g)

- pas0100(m/f/n/g): Your mother/your father showed you that he/she liked you.
- pas0101(m/f/n/g): Your mother/your father praised you.
- pas0102(m/f/n/g): Your mother/your father tried to cheer you up when you are sad.
- pas0103(m/f/n/g): Your father/mother gave you advice regarding your personal problems. [35]

Psychological Control: pas0104(m/f/n/g), pas0105(m/f/n/g), pas0106(m/f/n/g)

- pas0104(m/f/n/g): Your mother/your father punished you when you did something against his/her will.
- pas0105(m/f/n/g): Your mother/your father was disappointed and sad because you misbehaved. [35]
- pas0106(m/f/n/g): Your mother/your father made it clear to you that you were not to break the rules or question his/her decisions. [35]

[35] These items were not covered by the original questionnaire but introduced to guarantee strong correspondence to the parents' items.

Negative Communication: pas0107(m/f/n/g), pas0108(m/f/n/g)

- pas0107(m/f/n/g): Your mother/your father yelled at you because you did something wrong.
- pas0108(m/f/n/g): Your mother/your father scolded you because he/she was angry at you.

Monitoring: pas0109(m/f/n/g), pas0110(m/f/n/g)

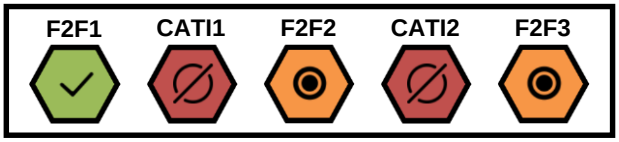
- pas0109(m/f/n/g): When you made new friends, your mother/your father talked to you about them. [35]
- pas0110(m/f/n/g): When you make new friends, your mother/your father got to know them soon thereafter. [35]

Inconsistent Parenting: pas0111(m/f/n/g), pas0112(m/f/n/g)

- pas0111(m/f/n/g): Your mother/your father threatened you with a punishment but didn't actually follow through. [35]
- pas0112(m/f/n/g): Your mother/your father found it hard to set and keep consistent rules for you.[35]

References

Schmahl, F., Wilhelm, B., Friedrich, S., Wendt, E.-V., Thoennissen, C., & Walper, S. (2012). *Scales Manual of the German Family Panel. Wave 1 to 3*. http://www.pairfam.de/fileadmin/user_upload/redakteur/publis/Dokumentation/Manuals/Scales_Manual_pairfam_6.0.pdf



Sibling Relationship Quality

Summary

Cicirelli (1995) defines sibling relationship as “the total of the interactions (physical, verbal, and nonverbal communication) of two or more individuals who share knowledge, perceptions, attitudes, beliefs, and feelings regarding each other, from the time that one sibling becomes aware of the other” (p. 4). In the *TwinLife* study, sibling relationship was measured via self-report of twins and siblings. Participants between 5 and 14 years of age were asked to rate affection, hostility, and rivalry in their sibling relationship on the Sibling Relationship Inventory (SRI; Boer et al., 1997). The Adult Sibling Relationship Questionnaire (ASRQ; Stocker et al., 1997) was used for participants of 15 years and older, measuring warmth, conflict, and rivalry between siblings. In face to face wave one, participants aged 5 to 9 rated their sibling relationship in the CAPI module, whereas participants 10 years and older rated their sibling relationship in the CASI module. In face to face wave two, participants aged 10 or older also rated their sibling relationship in the CASI module. The sub-facet rivalry of the ASRQ was also assessed in the face to face three interview.

Scales and items

SRI – Version 1 – Early childhood

F2F1: -9
F2F2: Ø
F2F3: Ø

“How about you and <name of sibling>?”

Response format:

1	2	3
Never	Occasionally	Very often

Affection: sre0500(t/u/s), sre0501(t/u/s), sre0502(t/u/s), sre0503(t/u/s)

Twin on co-twin: sre0500, sre0501, sre0502, sre0503

Twin on Sibling: sre0500s, sre0501s, sre0502s, sre0503s

Sibling on twins: sre0500(t/u), sre0501(t/u), sre0502(t/u), sre0503(t/u)

- sre0500(t/u/s): What about doing nice things like helping or doing favors for <name of sibling>? How often do you do these kinds of things?
- sre0501(t/u/s): Most children are affectionate with their brother or sister sometimes even though they fight at other times. How often are

you physically affectionate with <name of sibling> (such as by hugging, kissing, holding hands)?

- sre0502(t/u/s): How about if [target sibling] is hurt or upset, how often do you try to make <name of sibling> feel better?
- sre0503(t/u/s): Some children share secrets with their brothers and sisters and other children don't. How often do you share secrets with <name of sibling>?

Hostility: sre0504(t/u/s), sre0505(t/u/s), sre0506(t/u/s), sre0507(t/u/s)

Twin on co-twin: sre0504, sre0505, sre0506, sre0507

Twin on Sibling: sre0504s, sre0505s, sre0506s, sre0507s

Sibling on twins: sre0504(t/u), sre0505(t/u), sre0506(t/u), sre0507(t/u)

- sre0504(t/u/s): Brothers and sisters sometimes cause trouble or start fights or arguments with one another, even if they love each other a lot. How often would you say that you start fights or cause trouble for <name of sibling>?
- sre0505(t/u/s): How often do you feel mad or angry at <name of sibling>?
- sre0506(t/u/s): Children sometimes hurt their brother or sister on purpose like by pushing, punching or hitting him or her. How often do you do these kinds of things to <name of sibling>?
- sre0507(t/u/s): Some children are mean to their brothers or sisters sometimes, even if they really care about them. How often would you say you do things to <name of sibling> like tease, bug or call him or her names?

Rivalry: sre0508(t/u/s), sre0509(t/u/s), sre0510(t/u/s), sre0511(t/u/s)

Twin on co-twin: sre0508, sre0509, sre0510, sre0511

Twin on Sibling: sre0508s, sre0509s, sre0510s, sre0511s

Sibling on twins: sre0508(t/u), sre0509(t/u), sre0510(t/u), sre0511(t/u)

- sre0508(t/u/s): Many kids complain that their mothers aren't fair about how they treat them compared to how their mothers treat their brothers and sisters. How is this for you? How often do you feel that your mother treats <name of sibling> better than she treats you?
- sre0509(t/u/s): How about with your father? How often do you feel that he treats <name of sibling> better than he treats you?

- sre0510(t/u/s): How about with your mother? How often do you feel sort of jealous about your mother's attention or affection <name of sibling>?"
- sre0511(t/u/s): How about with your father? How often do you feel sort of jealous about your father's attention or affection toward <name of sibling>?

SRI - Version 2 – Late childhood

F2F1: 10-14
F2F2: 10-14
F2F3: Ø

"How about you and <name of sibling>?

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very often

Affection: sre0100(t/u/s), sre0101(t/u/s), sre0102(t/u/s), sre0103(t/u/s)

Twin on co-twin: sre0100, sre0101, sre0102, sre0103

Twin on Sibling: sre0100s, sre0101s, sre0102s, sre0103s

Sibling on twins: sre0100(t/u), sre0101(t/u), sre0102(t/u), sre0103(t/u)

- sre0100(t/u/s): What about doing nice things like helping or doing favors for <name of sibling>? How often do you do these kinds of things?
- sre0101(t/u/s): Most children are affectionate with their brother or sister sometimes even though they fight at other times. How often are you physically affectionate with <name of sibling> (such as by hugging, kissing, holding hands)?
- sre0102(t/u/s): How about if <name of sibling> is hurt or upset, how often do you try to make <name of sibling> feel better?
- sre0103(t/u/s): Some children share secrets with their brothers and sisters and other children don't. How often do you share secrets with <name of sibling>?

Hostility: sre0104(t/u/s), sre0105(t/u/s), sre0106(t/u/s), sre0107(t/u/s)

Twin on co-twin: sre0104, sre0105, sre0106, sre0107

Twin on Sibling: sre0104s, sre0105s, sre0106s, sre0107s

Sibling on twins: sre0104(t/u), sre0105(t/u), sre0106(t/u), sre0107(t/u)

- sre0104(t/u/s): Brothers and sisters sometimes cause trouble or start fights or arguments with one another, even if they love each other a lot. How often would you say that you start fights or cause trouble for <name of sibling>?
- sre0105(t/u/s): How often do you feel mad or angry at [target sibling]?
- sre0106(t/u/s): Children sometimes hurt their brother or sister on purpose like by pushing, punching or hitting him or her. How often do you do these kinds of things to <name of sibling>?
- sre0107(t/u/s): Some children are mean to their brothers or sisters sometimes, even if they really care about them. How often would you say you do things to <name of sibling> like tease, bug or call him or her names?

Rivalry: sre0108(t/u/s), sre0109(t/u/s), sre0110(t/u/s), sre0111(t/u/s)

Twin on co-twin: sre0108, sre0109, sre0110, sre0111

Twin on Sibling: sre0108s, sre0109s, sre0110s, sre0111s

Sibling on twins: sre0108(t/u), sre0109(t/u), sre0110(t/u), sre0111(t/u)

- sre0108(t/u/s): Many kids complain that their mothers aren't fair about how they treat them compared to how their mothers treat their brothers and sisters. How is this for you? How often do you feel that your mother treats <name of sibling> better than she treats you?
- sre0109(t/u/s): How about with your father? How often do you feel that he treats <name of sibling> better than he treats you?
- sre0110(t/u/s): “How about with your mother? How often do you feel sort of jealous about your mother’s attention or affection toward <name of sibling>?”
- sre0111(t/u/s): How about with your father? How often do you feel sort of jealous about your father's attention or affection toward <name of sibling>?

ASRQ

“Next there are a few questions about your relationship to <name of sibling>. How about you and <name of sibling>.”

Warmth: sre0200(t/u/s), sre0300(t/u/s), sre0302(t/u/s)

F2F1: 15+
F2F2: 15+
F2F3: Ø

Twin on co-twin: sre0200, sre0300, sre0302

Twin on Sibling: sre0200s, sre0300s, sre0302s

Sibling on twins: sre0200(t/u), sre0300(t/u), sre0302(t/u)

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very Often

- sre0200(t/u/s): How much do you talk with <name of sibling> about things that are important to you?

Response format:

1	2	3	4	5
Hardly at all	A little	Somewhat	Very much	Extremely much

- sre0300(t/u/s): How much do you try to cheer up <name of sibling> when he/she is feeling down?
- sre0302(t/u/s): How close do you feel to <name of sibling>?

Conflict: sre0201(t/u/s), sre0202(t/u/s), sre0301(t/u/s)

F2F1: 15+
F2F2: 15+
F2F3: Ø

Twin on co-twin: sre0201, sre0202, sre0301

Twin on Sibling: sre0201s, sre0202s, sre0301s

Sibling on twins: sre0201(t/u), sre0202(t/u), sre0301(t/u)

Response format:

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very Often

- sre0201(t/u/s): How often do you and <name of sibling> argue with each other?
- sre0202(t/u/s): How often do you do things to make <name of sibling> mad?

Response format:

1	2	3	4	5
Hardly at all	A little	Somewhat	Very much	Extremely much

- sre0301(t/u/s): How much does <name of sibling> irritate you?

Rivalry: sre0400(t/u/s)(r), sre0401(t/u/s)(r), sre0402(t/u/s)(r), sre0403(t/u/s)(r)

F2F1: 15+
F2F2: 15+
F2F3: 17+

Twin on co-twin: sre0400(r), sre0401(r), sre0402(r), sre0403(r)

Twin on Sibling: sre0400s(r), sre0401s(r), sre0402s(r), sre0403s(r)

Sibling on twins: sre0400(t/u)(r), sre0401(t/u)(r), sre0402(t/u)(r), sre0403(t/u)(r)

Response format:

1	2	3	4	5
My sibling thinks that I generally get more support.	… that I sometimes get more support.	… that we get the same amount of support.	… that she/he sometimes gets more support.	… that she/he generally gets more support
Recoding				
2	1	0	1	2

- sre0400(t/u/s): Does <name of sibling> think your mother supports him/her or you more? (r)

- sre0401(t/u/s): Does <name of sibling> think your father supports him/her or you more? (r)

Response format:

1	2	3	4	5
My sibling thinks that our mother/father is generally closer to me.	… that our mother/father is sometimes closer to me.	… that our mother/father is equally close to both of us.	… that our mother/father is sometimes closer with her/him.	… that our mother/father is generally closer with her/him.
Recoding				
2	1	0	1	2

- sre0402(t/u/s): Does <name of sibling> think your mother is closer to him/her or to you? (r)
- sre0403(t/u/s): Does <name of sibling> think your father is closer to him/her or to you? (r)

References

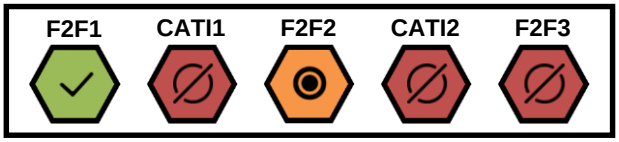
SRI:

Boer, F., Westenberg, P. M., McHale, S. M., Updegraff, K. A., & Stocker, C. M. (1997). The factorial structure of the Sibling Relationship Inventory (SRI) in American and Dutch samples. *Journal of Social and Personal Relationships*, *14*(6), 851–859. https://doi.org/10.1177/0265407597146009

ARSQ:

Stocker, C. M., Lanthier, R. P., & Furman, W. (1997). Sibling relationships in early adulthood. *Journal of Family Psychology*, *11*(2), 215–225. https://doi.org/10.1037/0893-3200.11.2.210

Heyeres, U. (2006). Adult sibling relationship questionnaire. *Gruppendynamik und Organisationsberatung, 37*(2), 215-225. https://doi.org/10.1007/s11612-006-0023-y



Quality of Home Environment

Summary

The quality of home environment - or household chaos - “occurs when a home environment is characterized by a lack of predictability, routine, organization, and stability” (Tucker et al., 2018, p. 3701). It was measured with an adapted version of the Chaos, Hubbub and Order Scale (CHAOS; Johnson et al., 2008). It assesses the degree of “environmental confusion” (e.g., noise or crowding) in children's homes and can be used to rate chaotic home environments. In face to face wave one and face to face wave two, participants 10 years and older (or up to 13 years of age in F2F2) answered the CHAOS scale in the CASI module. In face to face wave two, participants aged 5 to 10 answered the CHAOS scale via CAPI. Twins and siblings who did not live at home anymore had to rate their home environment retrospectively (via CASI). Parental report was only assessed in face to face wave one.

Scales and items

F2F1: 10+
F2F2: 10-13

Self-report - Chaos:

hoe0100 (i; children aged 10 to 13) **OR** hoe0102 (i; parent[36]), hoe0200, hoe0300, hoe0400(i), hoe0500, hoe0600(i)

“The next section deals with your family life. The following statements describe things that occur at home in many families. Please rate how these statements apply to your home.”

Response format:

1	2	3	4	5
Not correct at all	Rather not correct	Partly correct	Rather correct	Fully correct

[36] Please note: hoe0102 corresponds to hoe0100 and is only assessed for parents, whereas hoe0100 is only assessed for children between 10 and 13 years of age.

- hoe0100: I have a regular bedtime routine. (i)[37]
- hoe0102: The children have a regular bedtime routine. (i)[37]
- hoe0200: You can't hear yourself think in our home.
- hoe0300: It's a real zoo in our home.
- hoe0400: We are usually able to stay on top of things. (i)
- hoe0500: There is usually a television turned on somewhere in our home.
- hoe0600: The atmosphere in our house is calm. (i)

Child report – CHAOS:

F2F1: Ø
F2F2: -9

hoe0110(i), hoe0210, hoe0310, hoe0410(i), hoe0510, hoe0610(i)

“In the following, I would like to talk with you about your home. Please state how much these statements apply to your home.”

Response format:

1	2	3	4	5
Not correct at all	Rather not correct	Partly correct	Rather correct	Fully correct

- hoe0110: We have the same bedtime routine every night. (i)
- hoe0210: You can’t hear yourself think in our home.
- hoe0310: It's a real zoo in our home.
- hoe0410: We are usually able to stay on top of things. (i)
- hoe0510: There is almost always a TV on somewhere in our home.
- hoe0610: The atmosphere in our home is calm. (i)

[37] hoe0100/2 were altered in wording for the needs of *TwinLife*.

Retrospective self-report:

F2F1: Not living with parents
F2F2: N

hoe0101(i), hoe0201, hoe0301, hoe0401(i), hoe0501, hoe0601(i)

“Please rate how these statements applied to your home when you lived at home.”

Response format:

1	2	3	4	5
Not correct at all	Rather not correct	Partly correct	Rather correct	Fully correct

- hoe0101: I used to have a regular bedtime routine. (i)
- hoe0201: You couldn't hear yourself think in our home.
- hoe0301: It was a real zoo in our home.
- hoe0401: We were usually able to stay on top of things. (i)
- hoe0501: There was usually a television turned on somewhere in our home.
- hoe0601: The atmosphere in our house was calm. (i)

References

CHAOS Scale:

Johnson, A. D., Martin, A., Brooks-Gunn, J., & Petrill, S. A. (2008). Order in the house! Associations among household chaos, the home literacy environment, maternal reading ability, and children’s early reading. *Merrill-Palmer quarterly (Wayne State University. Press)*, *54*(4), 445. https://doi.org/10.1353/mpq.0.0009

General References

Achenbach, T. M., & McConaughy, S. H. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, *101*(2), 213–232. https://doi.org/10.1037/0033-2909.101.2.213

Altemeyer, R. A., & Altemeyer, B. (1981). *Right-wing authoritarianism*. University of Manitoba press.

American Psychiatric Association, DSM-5 Task Force. (2013). Diagnostic and statistical manual of mental disorders: DSM-5™ (5th ed.). American Psychiatric Publishing, Inc.. https://doi.org/10.1176/appi.books.9780890425596

Arens, A. K., & Waterman, R. (2015). How an early transition to high-ability secondary schools affects students' academic self-concept: Contrast effects, assimilation effects, and differential stability. *Learning and Individual Differences*, *37*, 64–71. https://doi.org/10.1016/j.lindif.2014.11.007

Aron, E. N., Aron, A., & Jagiellowicz, J. (2012). Sensory processing sensitivity: A review in the light of the evolution of biological responsivity. *Personality and Social Psychology Review, 16*(3), 262–282. https://doi.org/10.1177/1088868311434213

Atkinson, J.W. (1966). Motivational determinants of risk-taking behavior. In Atkinson, J.W. and Feather, N.T. (Eds.). *A theory of achievement motivation* (pp. 11-30). John Wiley and Sons, New York.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Baum, M. A., Klatzka, C. H., Iser, J., & Hahn, E. (2020). *TwinLife Scales Manual. F2F1, CATI 1, & F2F2* v.2.0.0 (*TwinLife* Technical Report Series, 08). Bielefeld: Project *TwinLife* "Genetic and social causes of life chances" (Universität Bielefeld / Universität des Saarlandes). https://www.twin-life.de/documentation/images/TwinLife/Downloads/TwinLife_TR_08_v2-0-0.pdf

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*(6), 351–355. https://doi.org/10.1111/j.1467-8721.2007.00534.x

Billieux, J. (2012). Problematic use of the mobile phone: A literature review and a pathways model. *Current Psychiatry Reviews*, *8*(4), 299-307. https://doi.org/10.2174/157340012803520522

Blossfeld, H. P., Roßbach, H. G., & von Maurice, J. (2011). The National Educational Panel Study (NEPS). *Zeitschrift Für Erziehungswissenschaft: Special*, *14*.

Bolger, K. E., & Patterson, C. J. (2001). Pathways from child maltreatment to internalizing problems: Perceptions of control as mediators and moderators. *Development and Psychopathology*, *13*(4), 913–940. https://doi.org/10.1017/S0954579401004096

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). Greenwood Press.

Cicirelli, V. G. (1995). *Sibling Relationships Across the Life Span*. Springer publishing company. https://doi.org/10.1007/978-1-4757-6509-0

Cohen, J., McCabe, L., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, *111*(1), 180–213. https://doi.org/10.1177/016146810911100108

Costa, P. T., & McCrae, R. R. (1985). *The NEO personality inventory manual*. Psychological Assessment Resources. Odessa.

Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice*, *5*(3), 314–332. https://doi.org/10.1111/j.1468-2850.1998.tb00152.x

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie canadienne, 49*(3), 182–185. https://doi.org/10.1037/a0012801

Degkwitz, R., Helmchen, H., Kockott, G., & Mombour, W. (1975). *Diagnosenschlüssel und Glossar psychiatrischer Krankheiten: Deutsche Ausgabe der internationalen Klassifikation der WHO: ICD (ICD= International Classification of Diseases), 8. Revision, und des internationalen Glossars* [Diagnosis code and glossary of psychiatric diseases: German edition of the WHO International Classification of Diseases (ICD= International Classification of Diseases), 8th revision, and of the International Glossary.]. Springer publishing company. https://doi.org/10.1007/978-3-642-96254-7

Diewald, M.; Riemann, R.; Spinath, F. M.; Gottschling, J.; Hahn, E.; Kornadt, A. E.; Kottwitz, A.; Mönkediek, B.; Schulz, W.; Schunck, R.; Baier, T.; Bartling, A.; Baum, M. A.; Eichhorn, H.; Eifler, E. F.; Hildebrandt, J.; Hufer, A.; Kaempfert, M.; Klatzka, C. H.; … Weigel, L. (2021): *TwinLife* (v.1.0.0). GESIS Data Archive, Cologne. ZA6701 Data file Version 5.0.0, https://doi.org/10.4232/1.13747

El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent Involvement and Children's Academic and Social Development in Elementary School: Parent Involvement, Achievement, and Social Development. *Child Development*, *81*(3), 988–1005. https://doi.org/10.1111/j.1467-8624.2010.01447.x

Fetchenhauer, D. (2017). *Psychologie* (2.). München, Germany: Vahlen.

Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher Für Nationalökonomie Und Statistik* [Yearbooks of National Economy and Statistics], *239*(2), 345–360. https://doi.org/10.1515/jbnst-2018-0022

Gottschling, J. (2017). *Documentation TwinLife Data: Cognitive Abilities* (TwinLife Technical Report Series, 02). Bielefeld: Project TwinLife "Genetic and social causes of life chances" (Universität Bielefeld / Universität des Saarlandes). https://www.twin-life.de/images/TwinLife/Series/twinlife_tr_02.pdf

Hahn, E., Gottschling, J., König, C. J., & Spinath, F. M. (2016). The heritability of job satisfaction reconsidered: Only unique environmental influences beyond personality. *Journal of Business and Psychology*, *31*(2), 217–231. https://doi.org/10.1007/s10869-015-9413-x

Hamburger, M. E., Basile, K. C., & Vivolo, A. M. (2011). *Measuring bullying victimization, perpetration, and bystander experiences: A compendium of assessment tools.* Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. https://stacks.cdc.gov/view/cdc/5994/cdc_5994_DS1.pdf

Headey, B. (2008). Life goals matter to happiness: A revision of set-point theory. *Social indicators research*, *86*(2), 213-231. https://doi.org/10.1007/s11205-007-9138-y

Hofer, J., & Chasiotis, A. (2003). Congruence of life goals and implicit motives as predictors of life satisfaction: Cross-cultural implications of a study of Zambian male adolescents. *Motivation and Emotion*, *27*(3), 251-272. https://doi.org/10.1023/A:1025011815778

Horn, J. L., & Cattell, R. B. (1966). Refinement and test of the theory of fluid and crystallized general intelligences. *Journal of Educational Psychology*, *57*, 253–270. https://doi.org/10.1037/h0023816

Hsieh, P. H. (2011). Achievement Motivation. In S. Goldstein & J. A. Naglieri (Eds.), *Encyclopedia of Child Behavior and Development* (pp. 20-21). Springer publishing company. https://doi.org/10.1007/978-0-387-79061-9

Huinink, J., Brüderl, J., Nauck, B., Walper, S., Castiglioni, L., & Feldhaus, M. (2011). Panel Analysis of Intimate Relationships and Family Dynamics (pairfam): Conceptual framework and design. Journal of Family Research, 23(1), p. 77-101. https://doi.org/10.20377/jfr-235

Jonason, P. K., & Webster, G. D. (2010). The dirty dozen: A concise measure of the dark triad. *Psychological assessment*, *22*(2), 420. https://doi.org/10.1037/a0019265

Kluckhohn, F. R., & Strodtbeck, F. L. (1961). *Variations in value orientations*. Row, Peterson.

Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer publishing company.

Leung, C., & Tsang Kit Man, S. (2014). Parenting Style. In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (p. 199). Springer publishing company. https://doi.org/10.1007/978-94-007-0753-5

Mönkediek, B., Lang, V., Weigel, L., Baum, M. A., Eifler, E. F., Hahn, E., Hufer, A., Klatzka, C. H., Kottwitz, A., Krell, K., Nikstat, A., Diewald, M., Riemann, R., & Spinath, F. M. (2019). The German Twin Family Panel (TwinLife). *Twin Research and Human Genetics 22*(6), 540–547. https://doi.org/10.1017/thg.2019.63

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*(6), 1321-1339. https://doi.org/10.1037/0021-9010.91.6.1321

Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, *126*(2), 247–259. https://doi.org/10.1037/0033-2909.126.2.247

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Blackwell Publishing.

Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G. C., & Levy, K. N. (2009). Initial construction and validation of the Pathological Narcissism Inventory. *Psychological Assessment, 21*(3), 365–379. https://doi.org/10.1037/a0016530

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: Different concepts, different outcomes. *American Sociological Review*, *60*(1), 141–156. https://doi.org/2096350

Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust. *Journal of personality, 35*(4), 651-665. https://doi.org/10.1111/j.1467-6494.1967.tb01454.x

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, *4*(3), 219–247. https://doi.org/10.1037/0278-6133.4.3.219

Schmidt-Atzert, L., & Amelang, M. (2012). *Psychologische Diagnostik* (5.). Springer publishing company.

Schmitt, M., Baumert, A., Fetchenhauer, D., Gollwitzer, M., Rothmund, T., & Schlösser, T. (2009). Sensibilität für Ungerechtigkeit [Sensitivity to injustice]. *Psychologische Rundschau, 60*(1), 8–22. https://doi.org/10.1026/0033-3042.60.1.8

Schmitt, M., Baumert, A., Gollwitzer, M., & Maes, J. (2010). The Justice Sensitivity Inventory: Factorial Validity, Location in the Personality Facet Space, Demographic Pattern, and Normative Data. *Social Justice Research, 23*(2), 211–238. https://doi.org/10.1007/s11211-010-0115-2

Spinath, B., & Spinath, F. M. (2005). Longitudinal analysis of the link between learning motivation and competence beliefs among elementary school children. *Learning and Instruction*, *15*(2), 87–102. https://doi.org/10.1016/j.learninstruc.2005.04.008

Tucker, C. J., Sharp, E. H., Van Gundy, K. T., & Rebellon, C. (2018). Household chaos, hostile parenting, and adolescents' well-being two years later. *Journal of Child and Family Studies*, *27*(11), 3701–3708. https://doi.org/10.1007/s10826-018-1198-x

van Liew, J. R. (2013). Locus of Control. In M. D. Gellman & J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine*. Springer publishing company. https://doi.org/10.1007/978-1-4419-1005-9

Veenhoven, R. (1996). The study of life satisfaction. In V. E. Saris, A. C. Scherpenzeel, & B. Bunting (Eds.), *A comparative study of satisfaction with life in Europe* (pp. 11–48). Eötvös University Press.

Weidinger, A. F., Spinath, B., & Steinmayr, R. (2016). Why does intrinsic motivation decline following negative feedback? The mediating role of ability self-concept and its moderation by goal orientations. *Learning and Individual Differences*, *47*, 117–128. https://doi.org/10.1016/j.lindif.2016.01.003

Appendix A

Variable names

Variable names in the *TwinLife* data follow a distinctive structure. For a more extensive overview on the data structure, please consult the *TwinLife* data documentation website (https://www.twin-life.de/documentation/). In general, variable names consist of:

a) a variable stem indicating which construct was assessed;
b) a number indicating the item block;
c) a number indicating the exact item; and
d) in case of an external report, a suffix indicating about whom there is information available:

Variable stem (construct) - Item block - Item number - (Person code, in case of an external report)

In the following, two examples for variable names are explained more thoroughly.

External Report

pas0100m: **pas** (Parenting style) - **01** (First itemblock) - **00** (First item in item-block) - **m** (External report on the mother)

Consequently, the item *pas0100m* represents the child's rating of parental style, more precisely on how much affection the parent, here the mother, shows.
Person codes suffixes:

t	First-born twin	m	Mother of twins
u	Second-born twin	f	Father of twins
s	Sibling	g	Mother's partner
		n	Father's partner

Self-report

per0102: **per** (Personality) - **01** (First itemblock) - **02** (Third item in item-block)

In result, the item *per0102* represents the respondent's rating on his/her personality via self-report. More precisely, it represents the rating on the tendency to be rude to others.

Appendix B

SPSS Syntax

The syntaxes below show SPSS syntax for calculating all scales mentioned in the current version of the scales manual. This syntax is also available as .sps file in the download section of our data documentation website (https://www.twin-life.de/documentation/downloads).

```
* Encoding: UTF-8.
*TwinLife Scales for Data Release v6-0-0*
*Contains syntax for all scales included in the TwinLife Scales Manual.
*Literature:
TwinLife Scales Manual. F2F1, CATI1, F2F2, CATI2 & F2F3 v2.1.1
Klatzka, C. H., Baum, M. A., Nikstat, A., Paulus, L., Iser, J., Elena T. T. Dang & Hahn,
E. (2022). TwinLife Technical Report Series, 08. Project TwinLife: Genetic and social
causes of life chances (Universität Bielefeld / Universität des Saarlandes),
https://pub.uni-bielefeld.de/record/2939852
*For further information see https://www.twin-life.de/documentation
*Table of contents
1. Skill formation and education
2. Career, labor market attainment, and welfare
3. Political and social integration and participation
4. Subjective perception of quality of life
5. Physical and psychological health
6. Psychopathology and deviant behavior
7. Environment

*Please note: This syntax refers to the data files in person-wave-format (‘long format’;
ZA6701_en_person_wid?_v?), in which each surveyed person has one data row for each survey
wave.
*To adapt the syntax to the data sets in family format (‘wide format’;
ZA6701_en_family_wide_wid$_v$), you have to add the desired suffixes to each variable.
      *Example:
         *compute sefmean = mean.2(sef0100, sef0101, sef0102).
         *variable labels sefmean 'scale self-efficacy (mean)'.
         *exe.
      *has to be transformed into
         *compute sefmean_t_1 = mean.2(sef0100_t_1, sef0101_t_1, sef0102_t_1).
         *variable labels sefmean_t_1 'T1: scale self-efficacy (mean)'.
         *exe.
*for the data set in wide-format, if you are interested in the self-efficacy of twin 1 in
the F2F1 survey wave.
*Please also note that in contrast to the recommendations of the scales manual, this
syntax does not provide for recoding scales in which all items are coded in the same
direction.
*An exception are cases of dichotomous variables where the response option 2 = "no" must
be recoded to 0.
*****************************************************************
1. Skill formation and education
*****************************************************************
*Please note: for cognitive abilities, the data set already contains sum scores (see
TwinLife Scales manual, p. 3ff.).
*a) Academic self-concept (Children aged 5 to 7).
*In the response format, option 1 and 2 were accidentally switched in the survey and
therefore have to be recoded.
recode asc0100 asc0101 asc0102 asc0103 asc0104 asc0105 asc0106 (1=2) (2=1) (3=3) (4=4)
INTO
      asc0100rec asc0101rec asc0102rec asc0103rec asc0104rec asc0105rec asc0106rec.
      exe.
      compute asc_verb = mean.2(asc0100rec, asc0101rec, asc0102rec).
```

```
      compute asc_math = mean.3(asc0103rec, asc0104rec, asc0105rec, asc0106rec).
      variable labels
      asc_verb 'Scale verbal self-concept (mean)'
      asc_math 'Scale mathematical self-concept (mean)'.
      exe.
*b) Self-perceived ability.
*Self-perceived ability in general, self-report (preschool children), one-item-scale:
spa0100.
      recode spa0100 (1=1) (2=0) INTO spa0100rec.
      exe.
*Self-perceived ability in general, self-report (school attendees).
      recode spa0202 (1=5) (2=4) (3=3) (4=2) (5=1) INTO spa0202rec.
      exe.
      compute spagen= mean.2(spa0200, spa0201, spa0202rec).
      variable labels spagen 'Scale general self-perceived ability: self-report of school
      attendees (mean)'.
      exe.
*Self-perceived ability in general, parental report (preschool children).
      compute spa_prt= mean.2(spa0100t, spa0202t).
      compute spa_pru= mean.2(spa0100u, spa0202u).
      compute spa_prs= mean.2(spa0100s, spa0202s).
      variable labels
      spa_prt 'Scale general self-perceived ability twin1: parental report of school
      attendees (mean)'
      spa_pru 'Scale general self-perceived ability twin2: parental report of school
      attendees (mean)'
      spa_prs 'Scale general self-perceived ability sibling: parental report of school
      attendees (mean)'.
      exe.
*Self-perceived ability math, self-report (school attendees).
      recode spa0302 (1=5) (2=4) (3=3) (4=2) (5=1) INTO spa0302rec.
      exe.
      compute spamath= mean.2(spa0300, spa0301, spa0302rec).
      variable labels spamath 'Scale self-perceived ability math: self-report of school
      attendees (mean)'.
      exe.
*Self-perceived ability German, self-report (school attendees).
      recode spa0402 (1=5) (2=4) (3=3) (4=2) (5=1) INTO spa0402rec.
      exe.
      compute spager = mean.2(spa0400, spa0401, spa0402rec).
      variable labels spager 'Scale self-perceived ability German: self-report of school
      attendees (mean)'.
      exe.
*self-perceived job ability, self-report (aged 16 or older).
      compute spajob = mean.4(spa0500, spa0501, spa0502, spa0503, spa0504).
      variable labels spajob 'Scale self-perceived job ability: self-report (mean)'.
      exe.
*c) Motivation
*Anticipated intrinsic motivation, self-report (preschool children).
      compute imoanti = mean.2(imo0100, imo0101, imo0102).
      variable labels imoanti 'Scale anticipated intrinsic motivation: self-report of
      preschool children (mean)'.
      exe.
*Anticipated intrinsic motivation, parental report (preschool children).
      compute imo_prt= mean.2(imo0100t, imo0101t, imo0102t).
      compute imo_pru= mean.2(imo0100u, imo0101u, imo0102u).
      compute imo_prs= mean.2(imo0100s, imo0101s, imo0102s).
      variable labels
      imo_prt 'Scale general anticipated intrinsic motivation twin1: parental report of
      preschool children (mean)'
      imo_pru 'Scale general anticipated intrinsic motivation twin2: parental report of
      preschool children (mean)'
      imo_prs 'Scale general anticipated intrinsic motivation sibling: parental report of
      preschool children (mean)'.
      exe.
*Intrinsic motivation in general, self-report (school attendees).
      compute imogen= mean.2(imo0200, imo0201, imo0202).
```

```
      variable labels imogen 'Scale general intrinsic motivation: self-report of school
      attendees (mean)'.
      exe.
*Intrinsic motivation math, self-report (school attendees).
      compute imomath= mean.2(imo0300, imo0301, imo0302).
      variable labels imomath 'Scale intrinsic motivation math: self-report of school
      attendees (mean)'.
      exe.
*Intrinsic motivation German, self-report (school attendees).
      compute imoger= mean.2(imo0400, imo0401, imo0402).
      variable labels imoger 'Scale intrinsic motivation German: self-report of school
      attendees (mean)'.
      exe.
*Anticipated learning motivation, self-report (preschool children).
      compute imoantilearn = mean.2(imo0103, imo0104, imo0105).
      variable labels imoantilearn 'Scale anticipated learning motivation: self-report of
      preschool children (mean)'.
      exe.
*Learning motivation in general, self-report (school attendees aged 9/10 or younger).
      compute imolearn1= mean.2(imo0550, imo0551, imo0552).
      variable labels imolearn1 'Scale general intrinsic motivation: self-report of school
      attendees aged 9 or younger (mean)'.
      exe.
*Learning motivation in general, self-report (school attendees aged 10/11 or older).
      compute imolearn2= mean.2(imo0500, imo0501, imo0502).
      variable labels imolearn2 'Scale general intrinsic motivation: self-report of school
      attendees aged 10 or older (mean)'.
      exe.
*Job learning motivation in general, self-report (aged 16 or older).
      compute imojob = mean.2(imo0600, imo0601, imo0602).
      variable labels imojob 'Scale job learning motivation: self-report (mean)'.
      exe.
*Achievement motivation, self-report (aged 16 or older).
      compute imoachiev = mean.2(imo0700, imo0702).
      variable labels imoachiev 'Scale achievement motivation: self-report (mean)'.
      exe.
*Achievement motivation, self-report report (age 7 to 15), one-item-scale: imo0701.
*Achievement motivation, parental report report (school attendees), one-item-scale:
imo0701(t/u/s).
```

```
*d) Self-efficacy (self-report, aged 10 or older).
      compute sefmean = mean.2(sef0100, sef0101, sef0102).
      variable labels sefmean 'scale self-efficacy (mean)'.
      exe.
*e) Self-esteem.
*self-esteem, self-report (F2F1: aged 13 or older; F2F2: aged 10 or older).
      recode ses0100 (1=5) (2=4) (3=3) (4=2) (5=1) into ses0100rec.
      exe.
      compute sesmean = mean.2(ses0100rec, ses0101, ses0102).
      variable labels sesmean 'scale self-esteem (mean)'.
      exe.
*self-esteem parental report (children aged 5 to 12).
      compute ses_prt = mean.2(ses0200t, ses0102t).
      compute ses_pru = mean.2(ses0200u, ses0102u).
      compute ses_prs = mean.2(ses0200s, ses0102s).
      variable labels
      ses_prt 'Scale self-esteem twin1: parental report (mean)'
      ses_pru 'Scale self-esteem twin2: parental report (mean)'
      ses_prs 'Scale self-esteem sibling: parental report (mean)'.
      exe.
*f) Self-regulation.
*consistency of interest self-report (aged 10 or older).
      compute srgcoi = mean.2(srg0100, srg0200, srg0300).
      variable labels srgcoi 'Scale consistency of interest: self-report (mean)'.
      exe.
*Self-control self-report (aged 10 or older).
      compute srgsc = mean.2(srg0400, srg0500, srg0600).
      variable labels srgsc 'Scale self-control: self-report (mean)'.
      exe.
*Self-control parental report (children aged 5 to 9).
      compute srg_prt = mean.2(srg0400t, srg0500t, srg0600t).
      compute srg_pru = mean.2(srg0400u, srg0500u, srg0600u).
      compute srg_prs = mean.2(srg0400s, srg0500s, srg0600s).
      variable labels
      srg_prt 'Scale self-control twin1: parental report (mean)'
      srg_pru 'Scale self-control twin2: parental report (mean)'
      srg_prs 'Scale self-control sibling: parental report (mean)'.
      exe.
*g) Personality.
*personality self-report (aged 10 or older).
      recode per0102 (1=7) (2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO per0102rec.
      recode per0106 (1=7) (2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO per0106rec.
      recode per0111 (1=7) (2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO per0111rec.
      recode per0114 (1=7) (2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO per0114rec.
      exe.
      compute peropen = MEAN.3(per0103, per0108, per0113, per0115).
      compute percons = MEAN.2(per0100, per0106rec, per0110).
      compute perextr = MEAN.2(per0101, per0107, per0111rec).
      compute peragre = MEAN.2(per0102rec, per0105, per0112).
      compute perneur = MEAN.2(per0104, per0109, per0114rec).
      variable labels
      peropen 'Scale personality openness: self-report (mean)'
      percons 'Scale personality conscientiousness: self-report (mean)'
      perextr 'Scale personality extraversion: self-report (mean)'
      peragre 'Scale personality agreeableness: self-report (mean)'
      perneur 'Scale personality neuroticism: self-report (mean)'.
      exe.
```

```
*personality, parental report (children aged 5 to 9).
      recode per0400t (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0400trec.
      recode per0402t (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0402trec.
      recode per0406t (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0406trec.
      recode per0408t (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0408trec.
      recode per0409t (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0409trec.
      recode per0400u (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0400urec.
      recode per0402u (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0402urec.
      recode per0406u (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0406urec.
      recode per0408u (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0408urec.
      recode per0409u (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0409urec.
      recode per0400s (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0400srec.
      recode per0402s (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0402srec.
      recode per0406s (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0406srec.
      recode per0408s (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0408srec.
      recode per0409s (0=10)(1=9)(2=8)(3=7)(4=6)(5=5)(6=4)(7=3)(8=2)(9=1)(10=0) into
      per0409srec.
      exe.
      compute peropen_prt = mean.2(per0403t, per0408trec).
      compute percons_prt = mean.2(per0401t, per0406trec).
      compute perextr_prt = mean.2(per0400trec, per0405t).
      compute peragre_prt = mean.2(per0402trec, per0407t).
      compute perneur_prt = mean.2(per0404t, per0409trec).
      compute peropen_pru = mean.2(per0403u, per0408urec).
      compute percons_pru = mean.2(per0401u, per0406urec).
      compute perextr_pru = mean.2(per0400urec, per0405u).
      compute peragre_pru = mean.2(per0402urec, per0407u).
      compute perneur_pru = mean.2(per0404u, per0409urec).
      compute peropen_prs = mean.2(per0403s, per0408srec).
      compute percons_prs = mean.2(per0401s, per0406srec).
      compute perextr_prs = mean.2(per0400srec, per0405s).
      compute peragre_prs = mean.2(per0402srec, per0407s).
      compute perneur_prs = mean.2(per0404s, per0409srec).
      variable labels
      peropen_prt 'Scale personality openness twin1: parental report (mean)'
      percons_prt 'Scale personality conscientiousness twin1: parental report (mean)'
      perextr_prt 'Scale personality extraversion twin1: parental report (mean)'
      peragre_prt 'Scale personality agreeableness twin1: parental report (mean)'
      perneur_prt 'Scale personality neuroticism twin1: parental report (mean)'
      peropen_pru 'Scale personality openness twin2: parental report (mean)'
      percons_pru 'Scale personality conscientiousness twin2: parental report (mean)'
      perextr_pru 'Scale personality extraversion twin2: parental report (mean)'
      peragre_pru 'Scale personality agreeableness twin2: parental report (mean)'
      perneur_pru 'Scale personality neuroticism twin2: parental report (mean)'
      peropen_prs 'Scale personality openness sibling: parental report (mean)'
      percons_prs 'Scale personality conscientiousness sibling: parental report (mean)'
      perextr_prs 'Scale personality extraversion sibling: parental report (mean)'
      peragre_prs 'Scale personality agreeableness sibling: parental report (mean)'
      perneur_prs 'Scale personality neuroticism sibling: parental report (mean)'.
      exe.

*h) Narcissism.
      *self-report (aged between 11 and 16).
```

```
      compute narsup = MEAN.2(nar0200, nar0201).
      compute narexpl = MEAN.2(nar0202, nar0203).
      variable labels
      narsup 'Scale narcissism superiority: self-report (between 11y and 16y, mean)'
      narexpl 'Scale narcissism exploitativeness: self-report (between 11y and 16y, mean)'.
      exe.
      *self-report (aged 17 or older).
      compute narmean = mean.2(nar0100, nar0101, nar0102).
      variable labels
      narmean 'Scale narcissism: self-report (17y or older, mean)'.
      exe.
*i) Fear of failure.
      *self-report (aged 10 or older).
      compute fofmean = MEAN.4(fof0100, fof0101, fof0102, fof0103, fof0104).
      variable labels
      fofmean 'Scale fear of failure: self-report (mean)'.
      exe.
*j) Problematic Smartphone use.
      *self-report.
      compute smuse = MEAN.3(med1200, med1201, med1202, med1203).
      variable labels
      smuse 'Scale smartphone use: self-report (mean)'.
      exe.

*****************************************************************
2. Career, labor market attainment, and welfare
*****************************************************************
*a) Job autonomy (self-report, all employed participants).
      recode aut0103 (1=5)(2=4)(3=3)(4=2)(5=1) into aut0103rec.
      exe.
      compute autmean = mean.2(aut0101, aut0102, aut0103rec).
      variable labels autmean 'Scale job autonomy: self-report (mean)'.
      exe.
*****************************************************************
3. Political and social integration and participation
*****************************************************************
*a) Cultural capital.
*Embodied cultural capital (self-report, aged 10 or older).
      recode cul0201 cul0202 cul0203 cul0204 cul0205 (1=1)(2=0) into cul0201rec cul0202rec
      cul0203rec cul0204rec cul0205rec.
      exe.
      compute culcap = mean.4(cul0201rec, cul0202rec, cul0203rec, cul0204rec, cul0205rec).
      variable labels culcap 'Scale embodied cultural capital: self-report (mean)'.
      exe.
*cultural involvement (self-report, aged 10 or older).
      compute culinv = mean.3(cul0401, cul0402, cul0403, cul0404).
      variable labels culinv 'Scale cultural involvement: self-report (mean)'.
      exe.
*participation in high culture (self-report, aged 10 or older).
      compute culhigh = mean.2(cul0501, cul0503, cul0504).
      variable labels culhigh 'Scale participation in high culture: self-report (mean)'.
      exe.
*participation in high culture (parental report, aged 5 to 9).
      compute culhigh_prt = mean.2(cul0501t, cul0503t, cul0504t).
      compute culhigh_pru = mean.2(cul0501u, cul0503u, cul0504u).
      compute culhigh_prs = mean.2(cul0501s, cul0503s, cul0504s).
      variable labels
      culhigh_prt 'Scale participation in high culture: parental report (mean)'
      culhigh_pru 'Scale participation in high culture: parental report (mean)'
      culhigh_prs 'Scale participation in high culture: parental report (mean)'.
      exe.
*b) Social Trust
      * self-report (aged 15/13 or older).
      recode net0101 (1=4)(2=3)(3=2)(4=1) into net0101rec.
      recode net0102 (1=4)(2=3)(3=2)(4=1) into net0102rec.
      compute sotru =  Mean.2(net0100, net0101rec, net0102rec).
      variable labels sotru 'Scale social trust: self-report (aged 13/15 or older, mean)'.
```

```
      exe.
*c) Right-Wing Authoritarianism.
      *self-report (aged 13 or older).
      recode rwa0101 (1=5)(2=4)(3=3)(4=2)(5=1) into rwa0101rec.
      recode rwa0102 (1=5)(2=4)(3=3)(4=2)(5=1) into rwa0102rec.
      compute rwamean =  Mean.3(rwa0100, rwa0101rec, rwa0102rec, rwa0103).
      variable labels rwamean 'Scale right-wing authoritarianism: self-report (aged 13 or
      older, mean)'.
      exe.
*d) Social dominance Orientation.
      *self-report (aged 13 or older).
      recode sdo0102 (1=5)(2=4)(3=3)(4=2)(5=1) into sdo0102rec.
      compute sdomean =  Mean.3(sdo0100, sdo0101, sdo0102rec, sdo0103).
      variable labels sdomean 'Scale social dominance orientation: self-report (aged 13 or
      older, mean)'.
      exe.
*****************************************************************
4. Subjective perception of quality of life
*****************************************************************
*a) Global life satisfaction.
*global life satisfaction, self-report (aged 10 to 15).
      compute gls1mean = mean.4(gls0600, gls0700, gls0800, gls0900, gls1000).
      variable labels gls1mean 'scale satisfaction with life: self-report (between 10y and
      15y, mean)'.
      exe.
*global life satisfaction, self-report (aged 16 and older).
      compute gls2mean = mean.4(gls0100, gls0200, gls0300, gls0400, gls0500).
      variable labels gls2mean 'scale satisfaction with life: self-report (aged 16 or
      older, mean)'.
      exe.
*b) Optimism, self-report (aged 10 or older).
      compute lotmean = mean.2(lot0100, lot0101, lot0102).
      variable labels lotmean 'scale optimism: self-report (mean)'.
      exe.
*c) Burden and stress
*Burden and stress related to parenthood, self-report (aged 16  or  older  and  having  a
child).
      compute ebimean = mean.5(ebi0100, ebi0101, ebi0102, ebi0103, ebi0104, ebi0105).
      variable labels ebimean 'scale burden and stress related through parenthood: self-
      report (mean)'.
      exe.
*Stress regulation and coping, self-report (aged 5 to 15).
      compute svktask = mean.2(svk0100, svk0103, svk0106).
      compute svkemo = mean.2(svk0101, svk0104, svk0107).
      compute svkdist = mean.2(svk0102, svk0105, svk0108).
      variable labels
      svktask 'scale stress task orientation: self-report (aged 15 or younger, mean)'
      svkemo 'scale stress emotional coping: self-report (aged 15 or younger, mean)'
      svkdist 'scale stress distraction: self-report (aged 15 or younger, mean)'.
      exe.
*Stress regulation and coping, self-report (aged 16 or older).
      compute cistask = mean.2(cis0100, cis0103, cis0106).
      compute cisemo = mean.2(cis0101, cis0104, cis0107).
      compute cisdist = mean.2(cis0102, cis0105, cis0108).
      variable labels
      cistask 'scale stress task orientation: self-report (aged 16 or older, mean)'
      cisemo 'scale stress emotional coping: self-report (aged 16 or older, mean)'
      cisdist 'scale stress distraction: self-report (aged 16 or older, mean)'.
      exe.
*Locus of control, self-report (aged 5 to 15).
      compute loc1int = mean.2(loc0100, loc0102).
      compute loc1ext = mean.2(loc0101, loc0103).
      variable labels
      loc1int 'scale internal locus of control: self-report (aged 15 or younger, mean)'
      loc1ext 'scale external locus of control: self-report (aged 15 or younger, mean)'.
      exe.
*Locus of control, self-report (aged 16 or older).
```

```
      compute loc2int = mean.2(loc0200, loc0202).
      compute loc2ext = mean.2(loc0201, loc0203).
      variable labels
      loc2int 'scale internal locus of control: self-report (aged 16 or older, mean)'
      loc2ext 'scale external locus of control: self-report (aged 16 or older, mean)'.
      exe.
*d) Life Goals, self-report (aged 16 or older).
      compute lgdsucc = mean.2(lgd0101, lgd0102, lgd0105).
      compute lgdfam = mean.2(lgd0103, lgd0104).
      variable labels
      lgdsucc 'scale life goals success: self-report (mean)'
      lgdfam 'scale life goals family life: self-report (mean)'.
      exe.

*e) Sensory Processing Sensitivity
*Sensory processing sensitivity, self-report (between 10 and 15 years of age).
      compute sps1ease = mean.2(sps0102, sps0104).
      compute sps1aest = mean.2(sps0101, sps0103).
      compute sps1sens = mean.2(sps0100, sps0105).
      variable labels
      sps1ease 'scale ease of excitation: self-report (between 10y and 15y, mean)'
      sps1aest 'scale aesthetic sensitivity: self-report (between 10y and 15y, mean)'
      sps1sens 'scale low sensory threshold: self-report (between 10y and 15y, mean)'.
      exe.
*Sensory processing sensitivity, self-report (aged 16 or older).
      compute sps2ease = mean.2(sps0202, sps0204).
      compute sps2aest = mean.2(sps0201, sps0203).
      compute sps2sens = mean.2(sps0200, sps0205).
      variable labels
      sps2ease 'scale ease of excitation: self-report (aged 16 or older, mean)'
      sps2aest 'scale aesthetic sensitivity: self-report (aged 16 or older, mean)'
      sps2sens 'scale low sensory threshold: self-report (aged 16 or older, mean)'.
      exe.
```

```
*f) Bullying.
*Frequency of bullying, self-report (age 10 or older).
      compute bul1freq = mean.3(bul0100, bul0200, bul0300, bul0400).
      variable labels bul1freq 'scale frequency of bullying: self-report (aged 10 or older,
      mean)'.
      exe.
*Burden of bullying, self-report (age 10 or older).
      compute bul1burd = mean.3(bul0101, bul0201, bul0301, bul0401).
      variable labels bul1burd 'scale burden of bullying: self-report (aged 10 or older,
      mean)'.
      exe.
*Frequency of bullying, self-report (age 5 to 9).
      compute bul2freq = mean.3(bul0500, bul0600, bul0700, bul0800).
      variable labels bul2freq 'scale frequency of bullying: self-report (age 5 to 9,
      mean)'.
      exe.
*Burden of bullying, self-report (age 5 to 9).
      compute bul2burd = mean.3(bul0501, bul0601, bul0701, bul0801).
      variable labels bul2burd 'scale burden of bullying: self-report (age 5 to 9, mean)'.
      exe.
*g) Emotional Impairment
      *self-report (age 11 or older).
      compute emimean = mean.2(emi0102, emi0103).
      variable labels emimean 'scale emotional impairment: worrying self-report (age 11 or
      older, mean)'.
      exe.
*h) Injustice sensitivity.
      *Victim sensitivity, self-report (age 13 or older).
      compute ugsmean = mean.2(ugs0100, ugs0101).
      variable labels ugsmean 'scale injustice sensitivity: self-report (age 13 or older,
      mean)'.
      exe.


*********************************************************************
5. Physical and psychological health
*********************************************************************
*a) Depression, self-report (aged 10 or older).
      compute bdimean = mean.6(bdi0100, bdi0101, bdi0102, bdi0103, bdi0104, bdi0105,
      bdi0106).
      variable labels bdimean 'scale depression: self-report (mean)'.
      exe.
*********************************************************************
6. Psychopathology and deviant behavior
*********************************************************************
*a) Internalizing problem behavior.
*Internalizing problem behavior, self-report (aged 10 or older).
*please note: int0108 & int0109 were only asked if participant was aged 17 or younger,
whereas int0110 and int0111 were asked for participants aged 18 or older;
these items correspond in content; int0108 corresponds to int0111; int0109 corresponds to
int0110.
      recode int0106 (1=3)(2=2)(3=1) into int0106rec.
      recode int0107 (1=3)(2=2)(3=1) into int0107rec.
      exe.
      compute intemot = mean.4(int0100, int0101, int0102, int0103, int0104).
      compute intpeer = mean.4(int0105, int0106rec, int0107rec, int0108, int0109, int0110,
      int0111).
      variable labels
      intemot 'scale internalizing emotional symptoms: self-report (mean)'
      intpeer 'scale internalizing peer problems: self-report (mean)'.
      exe.
   *Internalizing problem behavior, parental report (children aged 5 to 9).

    recode int0106t (1=3)(2=2)(3=1) into int0106trec.
    recode int0107t (1=3)(2=2)(3=1) into int0107trec.
    recode int0106u (1=3)(2=2)(3=1) into int0106urec.
    recode int0107u (1=3)(2=2)(3=1) into int0107urec.
```

```
recode int0106s (1=3)(2=2)(3=1) into int0106srec.
recode int0107s (1=3)(2=2)(3=1) into int0107srec.
exe.
compute intemot_prt = mean.4(int0100t, int0101t, int0102t, int0103t, int0104t).
compute intpeer_prt = mean.4(int0105t, int0106trec, int0107trec, int0108t, int0109t).
compute intemot_pru = mean.4(int0100u, int0101u, int0102u, int0103u, int0104u).
compute intpeer_pru = mean.4(int0105u, int0106urec, int0107urec, int0108u, int0109u).
compute intemot_prs = mean.4(int0100s, int0101s, int0102s, int0103s, int0104s).
compute intpeer_prs = mean.4(int0105s, int0106srec, int0107srec, int0108s, int0109s).
variable labels
intemot_prt 'scale Internalizing emotional symptoms twin1: parental report (mean)'
intpeer_prt 'scale internalizing peer problems twin1: parental report (mean)'
intemot_pru 'scale Internalizing emotional symptoms twin2: parental report (mean)'
intpeer_pru 'scale internalizing peer problems twin2: parental report (mean)'
intemot_prs 'scale Internalizing emotional symptoms sibling: parental report (mean)'
intpeer_prs 'scale internalizing peer problems sibling: parental report (mean)'.
exe.
```

```
*b) Externalizing problem behavior.
*Externalizing problem behavior, self-report (aged 10 or older).
*please note: ext0101 was not assessed for participants aged 18 or older.
      recode ext0103 (1=3)(2=2)(3=1) into ext0103rec.
      recode ext0104 (1=3)(2=2)(3=1) into ext0104rec.
      recode ext0106 (1=3)(2=2)(3=1) into ext0106rec.
      exe.
      compute exthype = mean.4(ext0100, ext0101, ext0102, ext0103rec, ext0104rec).
      compute extcond = mean.4(ext0105, ext0106rec, ext0107, ext0108, ext0109).
      variable labels
      exthype 'scale externalizing hyperactivity: self-report (mean)'
      extcond 'scale externalizing conduct problems: self-report (mean)'.
      exe.
*Externalizing problem behavior, parental report (children aged 5 to 9).
      recode ext0102t (1=3)(2=2)(3=1) into ext0102trec.
      recode ext0103t (1=3)(2=2)(3=1) into ext0103trec.
      recode ext0105t (1=3)(2=2)(3=1) into ext0105trec.
      recode ext0102u (1=3)(2=2)(3=1) into ext0102urec.
      recode ext0103u (1=3)(2=2)(3=1) into ext0103urec.
      recode ext0105u (1=3)(2=2)(3=1) into ext0105urec.
      recode ext0102s (1=3)(2=2)(3=1) into ext0102srec.
      recode ext0103s (1=3)(2=2)(3=1) into ext0103srec.
      recode ext0105s (1=3)(2=2)(3=1) into ext0105srec.
      exe.
      compute exthype_prt = mean.4(ext0100t, ext0101t, ext0102trec, ext0103trec, ext0109t).
      compute extcond_prt = mean.4(ext0104t, ext0105trec, ext0106t, ext0107t, ext0108t).
      compute exthype_pru = mean.4(ext0100u, ext0101u, ext0102urec, ext0103urec, ext0109u).
      compute extcond_pru = mean.4(ext0104u, ext0105urec, ext0106u, ext0107u, ext0108u).
      compute exthype_prs = mean.4(ext0100s, ext0101s, ext0102srec, ext0103srec, ext0109s).
      compute extcond_prs = mean.4(ext0104s, ext0105srec, ext0106s, ext0107s, ext0108s).
      variable labels
      exthype_prt 'scale externalizing hyperactivity twin1: parental report (mean)'
      extcond_prt 'scale externalizing conduct problems twin1: parental report (mean)'
      exthype_pru 'scale externalizing hyperactivity twin2: parental report (mean)'
      extcond_pru 'scale externalizing conduct problems twin2: parental report (mean)'
      exthype_prs 'scale externalizing hyperactivity sibling: parental report (mean)'
      extcond_prs 'scale externalizing conduct problems sibling: parental report (mean)'.
      exe.
*c) Deviant and delinquent behavior, self-report (aged 5 to 9).
*Deviance.
      recode dev0101 (1=3)(2=2)(3=1) into dev0101rec.
      exe.
      compute devcond = mean.3(dev0100, dev0101rec, dev0102, dev0103).
      variable labels devcond 'scale deviant behavior conduct problems: self-report
      (mean)'.
      exe.
*****************************************************************
6. Environment
*****************************************************************
*a) School context
*Student teacher interaction, self-report (school attendees aged 13 or older).
      compute eduteach = mean.4(edu0700, edu0701, edu0800, edu0801, edu0802).
      variable labels eduteach 'scale student teacher interaction: self-report (mean)'.
      exe.
*Subjective burden at school, self-report (school attendees aged 13 or older).
      compute eduburd = mean.6(edu0901, edu0902, edu0903, edu0904, edu0905, edu0906,
      edu0907).
      variable labels eduburd 'scale subjective burden at school: self-report (mean)'.
      exe.
```

```
*b) Parental behavior and involvement.
*Parental involvement, self-report (F2F1: school attendees aged 9 or older; F2F2: school
attendees aged 10 to 20).
      compute invstruc = mean.2(inv0100, inv0101, inv0102).
      compute invemo = mean.2(inv0103, inv0104, inv0105).
      compute invauto = mean.2(inv0106, inv0107, inv0108).
      compute invcont = mean.2(inv0109, inv0110, inv0111).
      variable labels
      invstruc 'scale parental involvement structure: self-report (mean)'
      invemo 'scale parental involvement emotional support: self-report (mean)'
      invauto 'scale parental involvement autonomy: self-report (mean)'
      invcont 'scale parental involvement control: self-report (mean)'.
      exe.
*Parenting Style, parental report (F2F1 only).
      compute parwarm_prt=mean.3(par0100t,par0101t,par0102t,par0103t).
      compute parcont_prt=mean.2(par0104t,par0105t,par0106t).
      compute parnegc_prt=mean.2(par0107t,par0108t).
      compute parmoni_prt=mean.2(par0109t,par0110t).
      compute parinco_prt=mean.2(par0111t,par0112t).
      compute parwarm_pru=mean.3(par0100u,par0101u,par0102u,par0103u).
      compute parcont_pru=mean.2(par0104u,par0105u,par0106u).
      compute parnegc_pru=mean.2(par0107u,par0108u).
      compute parmoni_pru=mean.2(par0109u,par0110u).
      compute parinco_pru=mean.2(par0111u,par0112u).
      compute parwarm_prs=mean.3(par0100s,par0101s,par0102s,par0103s).
      compute parcont_prs=mean.2(par0104s,par0105s,par0106s).
      compute parnegc_prs=mean.2(par0107s,par0108s).
      compute parmoni_prs=mean.2(par0109s,par0110s).
      compute parinco_prs=mean.2(par0111s,par0112s).
      variable labels
      parwarm_prt 'parents on twin1: parenting scale warmth (mean)'
      parcont_prt 'parents on twin1: parenting scale psych. control (mean)'
      parnegc_prt 'parents on twin1: parenting scale negative communication (mean)'
      parmoni_prt 'parents on twin1: parenting scale monitoring (mean)'
      parinco_prt 'parents on twin1: parenting scale inconsistent parenting (mean)'
      parwarm_pru 'parents on twin2: parenting scale warmth (mean)'
      parcont_pru 'parents on twin2: parenting scale psych. control (mean)'
      parnegc_pru 'parents on twin2: parenting scale negative communication (mean)'
      parmoni_pru 'parents on twin2: parenting scale monitoring (mean)'
      parinco_pru 'parents on twin2: parenting scale inconsistent parenting (mean)'
      parwarm_prs 'parents on sibling: parenting scale warmth (mean)'
      parcont_prs 'parents on sibling: parenting scale psych. control (mean)'
      parnegc_prs 'parents on sibling: parenting scale negative communication (mean)'
      parmoni_prs 'parents on sibling: parenting scale monitoring (mean)'
      parinco_prs 'parents on sibling: parenting scale inconsistent parenting (mean)'.
      exe.
```

```
*Parenting Style, child report (children aged 5 to 9, F2F1 only).
      compute paswarm2m=mean.3(pas0200m,pas0201m,pas0202m,pas0203m).
      compute pascont2m=mean.2(pas0204m,pas0205m,pas0206m).
      compute pasnegc2m=mean.2(pas0207m,pas0208m).
      compute pasmoni2m=mean.2(pas0209m,pas0210m).
      compute pasinco2m=mean.2(pas0211m,pas0212m).
      compute paswarm2f=mean.3(pas0200f,pas0201f,pas0202f,pas0203f).
      compute pascont2f=mean.2(pas0204f,pas0205f,pas0206f).
      compute pasnegc2f=mean.2(pas0207f,pas0208f).
      compute pasmoni2f=mean.2(pas0209f,pas0210f).
      compute pasinco2f=mean.2(pas0211f,pas0212f).
      compute paswarm2n=mean.3(pas0200n,pas0201n,pas0202n,pas0203n).
      compute pascont2n=mean.2(pas0204n,pas0205n,pas0206n).
      compute pasnegc2n=mean.2(pas0207n,pas0208n).
      compute pasmoni2n=mean.2(pas0209n,pas0210n).
      compute pasinco2n=mean.2(pas0211n,pas0212n).
      compute paswarm2g=mean.3(pas0200g,pas0201g,pas0202g,pas0203g).
      compute pascont2g=mean.2(pas0204g,pas0205g,pas0206g).
      compute pasnegc2g=mean.2(pas0207g,pas0208g).
      compute pasmoni2g=mean.2(pas0209g,pas0210g).
      compute pasinco2g=mean.2(pas0211g,pas0212g).
      variable labels
      paswarm2m 'child on mother: parenting scale warmth (age 5-9, mean)'
      pascont2m 'child on mother: parenting scale psych. control (age 5-9, mean)'
      pasnegc2m 'child on mother: parenting scale negative communication (age 5-9, mean)'
      pasmoni2m 'child on mother: parenting scale monitoring (age 5-9, mean)'
      pasinco2m 'child on mother: parenting scale inconsistent parenting (age 5-9, mean)'
      paswarm2f 'child on father: parenting scale warmth (age 5-9, mean)'
      pascont2f 'child on father: parenting scale psych. control (age 5-9, mean)'
      pasnegc2f 'child on father: parenting scale negative communication (age 5-9, mean)'
      pasmoni2f 'child on father: parenting scale monitoring (age 5-9, mean)'
      pasinco2f 'child on father: parenting scale inconsistent parenting (age 5-9, mean)'
      paswarm2n 'child on stepmother: parenting scale warmth (age 5-9, mean)'
      pascont2n 'child on stepmother: parenting scale psych. control (age 5-9, mean)'
      pasnegc2n 'child on stepmother: parenting scale negative communication (age 5-9,
      mean)'
      pasmoni2n 'child on stepmother: parenting scale monitoring (age 5-9, mean)'
      pasinco2n 'child on stepmother: parenting scale inconsistent parenting (age 5-9,
      mean)'
      paswarm2g 'child on stepfather: parenting scale warmth (age 5-9, mean)'
      pascont2g 'child on stepfather: parenting scale psych. control (age 5-9, mean)'
      pasnegc2g 'child on stepfather: parenting scale negative communication (age 5-9,
      mean)'
      pasmoni2g 'child on stepfather: parenting scale monitoring (age 5-9, mean)'
      pasinco2g 'child on stepfather: parenting scale inconsistent parenting (age 5-9,
      mean)'.
      exe.
```

```
*Parenting Style, child report (children aged 10 or older, F2F1 and F2F2).
      compute paswarm1m=mean.3(pas0100m,pas0101m,pas0102m,pas0103m).
      compute pascont1m=mean.2(pas0104m,pas0105m,pas0106m).
      compute pasnegc1m=mean.2(pas0107m,pas0108m).
      compute pasmoni1m=mean.2(pas0109m,pas0110m).
      compute pasinco1m=mean.2(pas0111m,pas0112m).
      compute paswarm1f=mean.3(pas0100f,pas0101f,pas0102f,pas0103f).
      compute pascont1f=mean.2(pas0104f,pas0105f,pas0106f).
      compute pasnegc1f=mean.2(pas0107f,pas0108f).
      compute pasmoni1f=mean.2(pas0109f,pas0110f).
      compute pasinco1f=mean.2(pas0111f,pas0112f).
      compute paswarm1n=mean.3(pas0100n,pas0101n,pas0102n,pas0103n).
      compute pascont1n=mean.2(pas0104n,pas0105n,pas0106n).
      compute pasnegc1n=mean.2(pas0107n,pas0108n).
      compute pasmoni1n=mean.2(pas0109n,pas0110n).
      compute pasinco1n=mean.2(pas0111n,pas0112n).
      compute paswarm1g=mean.3(pas0100g,pas0101g,pas0102g,pas0103g).
      compute pascont1g=mean.2(pas0104g,pas0105g,pas0106g).
      compute pasnegc1g=mean.2(pas0107g,pas0108g).
      compute pasmoni1g=mean.2(pas0109g,pas0110g).
      compute pasinco1g=mean.2(pas0111g,pas0112g).
      variable labels
      paswarm1m 'child on mother: parenting scale warmth (age >=10, mean)'
      pascont1m 'child on mother: parenting scale psych. control (age >=10, mean)'
      pasnegc1m 'child on mother: parenting scale negative communication (age >=10, mean)'
      pasmoni1m 'child on mother: parenting scale monitoring (age >=10, mean)'
      pasinco1m 'child on mother: parenting scale inconsistent parenting (age >=10, mean)'
      paswarm1f 'child on father: parenting scale warmth (age >=10, mean)'
      pascont1f 'child on father: parenting scale psych. control (age >=10, mean)'
      pasnegc1f 'child on father: parenting scale negative communication (age >=10, mean)'
      pasmoni1f 'child on father: parenting scale monitoring (age >=10, mean)'
      pasinco1f 'child on father: parenting scale inconsistent parenting (age >=10, mean)'
      paswarm1n 'child on stepmother: parenting scale warmth (age >=10, mean)'
      pascont1n 'child on stepmother: parenting scale psych. control (age >=10, mean)'
      pasnegc1n 'child on stepmother: parenting scale negative communication (age >=10,
      mean)'
      pasmoni1n 'child on stepmother: parenting scale monitoring (age >=10, mean)'
      pasinco1n 'child on stepmother: parenting scale inconsistent parenting (age >=10,
      mean)'
      paswarm1g 'child on stepfather: parenting scale warmth (age >=10, mean)'
      pascont1g 'child on stepfather: parenting scale psych. control (age >=10, mean)'
      pasnegc1g 'child on stepfather: parenting scale negative communication (age >=10,
      mean)'
      pasmoni1g 'child on stepfather: parenting scale monitoring (age >=10, mean)'
      pasinco1g 'child on stepfather: parenting scale inconsistent parenting (age >=10,
      mean)'.
      exe.
```

```
*c) Sibling relationship quality.
*sibling relationship quality, self-report (aged 5 to 9, F2F1 only).
      compute sreaff5 = mean.3(sre0500, sre0501, sre0502, sre0503).
      compute srehos5 = mean.3(sre0504, sre0505, sre0506, sre0507).
      compute sreriv5 = mean.3(sre0508, sre0509, sre0510, sre0511).
      compute sreaff5t = mean.3(sre0500t, sre0501t, sre0502t, sre0503t).
      compute srehos5t = mean.3(sre0504t, sre0505t, sre0506t, sre0507t).
      compute sreriv5t = mean.3(sre0508t, sre0509t, sre0510t, sre0511t).
      compute sreaff5u = mean.3(sre0500u, sre0501u, sre0502u, sre0503u).
      compute srehos5u = mean.3(sre0504u, sre0505u, sre0506u, sre0507u).
      compute sreriv5u = mean.3(sre0508u, sre0509u, sre0510u, sre0511u).
      compute sreaff5s = mean.3(sre0500s, sre0501s, sre0502s, sre0503s).
      compute srehos5s = mean.3(sre0504s, sre0505s, sre0506s, sre0507s).
      compute sreriv5s = mean.3(sre0508s, sre0509s, sre0510s, sre0511s).
      variable labels
      sreaff5 'twin on co-twin: scale sibling relationship affection (age 5-9, mean)'
      srehos5 'twin on co-twin: scale sibling relationship hostility (age 5-9, mean)'
      sreriv5 'twin on co-twin: scale sibling relationship rivalry (age 5-9, mean)'
      sreaff5t 'sibling on twin1: scale sibling relationship affection (age 5-9, mean)'
      srehos5t 'sibling on twin1: scale sibling relationship hostility (age 5-9, mean)'
      sreriv5t 'sibling on twin1: scale sibling relationship rivalry (age 5-9, mean)'
      sreaff5u 'sibling on twin2: scale sibling relationship affection (age 5-9, mean)'
      srehos5u 'sibling on twin2: scale sibling relationship hostility (age 5-9, mean)'
      sreriv5u 'sibling on twin2: scale sibling relationship rivalry (age 5-9, mean)'
      sreaff5s 'twin on sibling: scale sibling relationship affection (age 5-9, mean)'
      srehos5s 'twin on sibling: scale sibling relationship hostility (age 5-9, mean)'
      sreriv5s 'twin on sibling: scale sibling relationship rivalry (age 5-9, mean)'.
      exe.
*sibling relationship quality, self-report (aged 10 to 14).
      compute sreaff1 = mean.3(sre0100, sre0101, sre0102, sre0103).
      compute srehos1 = mean.3(sre0104, sre0105, sre0106, sre0107).
      compute sreriv1 = mean.3(sre0108, sre0109, sre0110, sre0111).
      compute sreaff1t = mean.3(sre0100t, sre0101t, sre0102t, sre0103t).
      compute srehos1t = mean.3(sre0104t, sre0105t, sre0106t, sre0107t).
      compute sreriv1t = mean.3(sre0108t, sre0109t, sre0110t, sre0111t).
      compute sreaff1u = mean.3(sre0100u, sre0101u, sre0102u, sre0103u).
      compute srehos1u = mean.3(sre0104u, sre0105u, sre0106u, sre0107u).
      compute sreriv1u = mean.3(sre0108u, sre0109u, sre0110u, sre0111u).
      compute sreaff1s = mean.3(sre0100s, sre0101s, sre0102s, sre0103s).
      compute srehos1s = mean.3(sre0104s, sre0105s, sre0106s, sre0107s).
      compute sreriv1s = mean.3(sre0108s, sre0109s, sre0110s, sre0111s).
      variable labels
      sreaff1 'twin on co-twin: scale sibling relationship affection (age 10-14, mean)'
      srehos1 'twin on co-twin: scale sibling relationship hostility (age 10-14, mean)'
      sreriv1 'twin on co-twin: scale sibling relationship rivalry (age 10-14, mean)'
      sreaff1t 'sibling on twin1: scale sibling relationship affection (age 10-14, mean)'
      srehos1t 'sibling on twin1: scale sibling relationship hostility (age 10-14, mean)'
      sreriv1t 'sibling on twin1: scale sibling relationship rivalry (age 10-14, mean)'
      sreaff1u 'sibling on twin2: scale sibling relationship affection (age 10-14, mean)'
      srehos1u 'sibling on twin2: scale sibling relationship hostility (age 10-14, mean)'
      sreriv1u 'sibling on twin2: scale sibling relationship rivalry (age 10-14, mean)'
      sreaff1s 'twin on sibling: scale sibling relationship affection (age 10-14, mean)'
      srehos1s 'twin on sibling: scale sibling relationship hostility (age 10-14, mean)'
      sreriv1s 'twin on sibling: scale sibling relationship rivalry (age 10-14, mean)'.
      exe.
```

```
*sibling relationship quality, self-report (aged 14 or older).
      recode sre0400 (1=2)(2=1)(3=0)(4=1)(5=2) into sre0400rec.
      recode sre0401 (1=2)(2=1)(3=0)(4=1)(5=2) into sre0401rec.
      recode sre0402 (1=2)(2=1)(3=0)(4=1)(5=2) into sre0402rec.
      recode sre0403 (1=2)(2=1)(3=0)(4=1)(5=2) into sre0403rec.
      recode sre0400t (1=2)(2=1)(3=0)(4=1)(5=2) into sre0400trec.
      recode sre0401t (1=2)(2=1)(3=0)(4=1)(5=2) into sre0401trec.
      recode sre0402t (1=2)(2=1)(3=0)(4=1)(5=2) into sre0402trec.
      recode sre0403t (1=2)(2=1)(3=0)(4=1)(5=2) into sre0403trec.
      recode sre0400u (1=2)(2=1)(3=0)(4=1)(5=2) into sre0400urec.
      recode sre0401u (1=2)(2=1)(3=0)(4=1)(5=2) into sre0401urec.
      recode sre0402u (1=2)(2=1)(3=0)(4=1)(5=2) into sre0402urec.
      recode sre0403u (1=2)(2=1)(3=0)(4=1)(5=2) into sre0403urec.
      recode sre0400s (1=2)(2=1)(3=0)(4=1)(5=2) into sre0400srec.
      recode sre0401s (1=2)(2=1)(3=0)(4=1)(5=2) into sre0401srec.
      recode sre0402s (1=2)(2=1)(3=0)(4=1)(5=2) into sre0402srec.
      recode sre0403s (1=2)(2=1)(3=0)(4=1)(5=2) into sre0403srec.
      exe.
      compute srewarm2 = mean.2(sre0200, sre0300, sre0302).
      compute sreconf2 = mean.2(sre0201, sre0202, sre0301).
      compute sreriv4 = mean.3(sre0400rec, sre0401rec, sre0402rec, sre0403rec).
      compute srewarm2t = mean.2(sre0200t, sre0300t, sre0302t).
      compute sreconf2t = mean.2(sre0201t, sre0202t, sre0301t).
      compute sreriv4t = mean.3(sre0400trec, sre0401trec, sre0402trec, sre0403trec).
      compute srewarm2u = mean.2(sre0200u, sre0300u, sre0302u).
      compute sreconf2u = mean.2(sre0201u, sre0202u, sre0301u).
      compute sreriv4u = mean.3(sre0400urec, sre0401urec, sre0402urec, sre0403urec).
      compute srewarm2s = mean.2(sre0200s, sre0300s, sre0302s).
      compute sreconf2s = mean.2(sre0201s, sre0202s, sre0301s).
      compute sreriv4s = mean.3(sre0400srec, sre0401srec, sre0402srec, sre0403srec).
      variable labels
      srewarm2 'twin on co-twin: scale sibling relationship warmth (age >=14, mean)'
      sreconf2 'twin on co-twin: scale sibling relationship conflict (age >=14, mean)'
      sreriv4 'twin on co-twin: scale sibling relationship rivalry (age >=14, mean)'
      srewarm2t 'sibling on twin1: scale sibling relationship warmth (age >=14, mean)'
      sreconf2t 'sibling on twin1: scale sibling relationship conflict (age >=14, mean)'
      sreriv4t 'sibling on twin1: scale sibling relationship rivalry (age >=14, mean)'
      srewarm2u 'sibling on twin2: scale sibling relationship warmth (age >=14, mean)'
      sreconf2u 'sibling on twin2: scale sibling relationship conflict (age >=14, mean)'
      sreriv4u 'sibling on twin2: scale sibling relationship rivalry (age >=14, mean)'
      srewarm2s 'twin on sibling: scale sibling relationship warmth (age >=14, mean)'
      sreconf2s 'twin on sibling: scale sibling relationship conflict (age >=14, mean)'
      sreriv4s 'twin on sibling: scale sibling relationship rivalry (age >=14, mean)'.
      exe.
```

```
*d) Quality of home environment.
*self-report (aged 10 or older, F2F1: parental report and child's report of children who
are currently living in the household of the parents; F2F2: only child’s report of
children who are currently living in the household of the parents).
*please note: hoe0102 corresponds to hoe0100 and is only assessed for parents, whereas
hoe0100 is only assessed for children between 10 and 13 years of age.
      recode hoe0100 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0100rec.
      recode hoe0102 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0102rec.
      recode hoe0400 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0400rec.
      recode hoe0600 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0600rec.
      exe.
      compute hoemean1 = mean.5(hoe0102rec, hoe0200, hoe0300, hoe0400rec, hoe0500,
      hoe0600rec).
      variable labels hoemean1 'scale quality of home environment: self-report parents
      (mean)'.
      exe.
      compute hoemean2 = mean.5(hoe0100rec, hoe0200, hoe0300, hoe0400rec, hoe0500,
      hoe0600rec).
      variable labels hoemean2 'scale quality of home environment: self-report child
      (mean)'.
      exe.
*self-report (children aged 9 or younger, F2F2 only).
      recode hoe0110 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0110rec.
      recode hoe0410 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0410rec.
      recode hoe0610 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0610rec.
      exe.
      compute hoechild = mean.5(hoe0110rec, hoe0210, hoe0310, hoe0410rec, hoe0510,
      hoe0610rec).
      variable labels hoechild 'scale quality of home environment: self-report (aged 9 or
      younger, mean)'.
      exe.
*retrospective self-report (children aged 16 or older outside of parental household, F2F1
and F2F2).
      recode hoe0101 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0101rec.
      recode hoe0401 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0401rec.
      recode hoe0601 (1=5)(2=4)(3=3)(4=2)(5=1) into hoe0601rec.
      exe.
      compute hoeretro = mean.5(hoe0101rec, hoe0201, hoe0301, hoe0401rec, hoe0501,
      hoe0601rec).
      variable labels hoeretro 'scale quality of home environment: retrospective self-
      report (mean)'.
      exe.
```

Appendix C

R Syntax

The syntaxes below show R markdown syntax for calculating all scales mentioned in the current version of the scales manual. This syntax is also available in the download section of our data documentation website (https://www.twin-life.de/documentation/downloads).

```
This R-script contains syntax for all scales included in the TwinLife Scales Manual
(v.2.1.1).
*Literature:
TwinLife Scales Manual. F2F1, CATI1, F2F2, CATI2 & F2F3 v2.1.1
Klatzka, C. H., Baum, M. A., Nikstat, A., Paulus, L., Iser, J., Elena T. T. Dang & Hahn,
E. (2022). TwinLife Technical Report Series, 08. Project TwinLife: Genetic and social
causes of life chances (Universität Bielefeld / Universität des Saarlandes),
https://pub.uni-bielefeld.de/record/2939852

For further information, see https://www.twin-life.de/documentation

# Table of contents
1. Skill formation and education
2. Career, labor market attainment, and welfare
3. Political and social integration and participation
4. Subjective perception of quality of life
5. Physical and psychological health
6. Psychopathology and deviant behavior
7. Environment

PLEASE NOTE:
This syntax refers to the data files in person-wave-format (‘long format’;
ZA6701_person_wid?_v?-0-0_en), in which each surveyed person has one data row for each
survey wave.
As recommended in the scales manual this syntax does provide for recoding scales in which
all items are coded in the same direction. In cases of dichotomous variables, the response
option 2 = "no" must be recoded to 0.
We provide the code only for one data collection as an example. The code should be altered
for other data collections and your research purposes.

```{r setup chunk}
## Please load the following packages into the current session:
      library(tidyverse)
      library(dplyr)
      library(car)

## If you haven't installed these packages yet, you can use these commands:
      # install.package("tidyverse")
      # install.package("car")
```

```{r importing datasets}
## package "haven" (part of tidyverse) for importing datasets in other formats
## SPSS files
      data_wid1 <- read_sav("C:/Example path.sav")
      data_wid2 <- read_sav("C:/Example path.sav")
      data_wid3 <- read_sav("C:/Example path.sav")
      data_wid4 <- read_sav("C:/Example path.sav")
      data_wid5 <- read_sav("C:/Example path.sav")

## OR
## STATA files
```
```

```
      data_wid1 <- read_dta("C:/Example path.dta")
      data_wid2 <- read_dta("C:/Example path.dta")
      data_wid3 <- read_dta("C:/Example path.dta")
      data_wid4 <- read_dta("C:/Example path.dta")
      data_wid5 <- read_dta("C:/Example path.dta")
```

```{r setting missings}
      data_wid1[data_wid1 < -51] <- NA
      data_wid2[data_wid2 < -51] <- NA
      data_wid3[data_wid3 < -51] <- NA
      data_wid4[data_wid4 < -51] <- NA
      data_wid5[data_wid5 < -51] <- NA
```

==========

Skill Formation and Education
Cognitive Abilities
*Please note: for cognitive abilities, the data set already contains sum scores (see TwinLife Scales manual, p. 9 ff.).

```{r Cognitive Abilities 1}
## Academic Self-Concept (Children aged 5 to 7).
## recoding the variables according to the manual
## NOTE: In the response format, option 1 and 2 were accidentally switched in the survey and therefore have to be recoded ((1=2), (2=1), (3=3), (4=4))
      data_wid1$asc0100.r <- recode(data_wid1$asc0100, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0101.r <- recode(data_wid1$asc0101, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0102.r <- recode(data_wid1$asc0102, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0103.r <- recode(data_wid1$asc0103, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0104.r <- recode(data_wid1$asc0104, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0105.r <- recode(data_wid1$asc0105, "1=3; 2=4; 3=2; 4=1")
      data_wid1$asc0106.r <- recode(data_wid1$asc0106, "1=3; 2=4; 3=2; 4=1")
## computing mean for every row for Verbal self-concept: asc0100(r), asc0101(r), asc0102(r)
      data_wid1$asc_verb <-  rowMeans(data_wid1[c("asc0100.r", "asc0101.r", "asc0102.r")], na.rm = TRUE)
## computing mean for every row for Mathematical self-concept: asc0103(r), asc0104(r), asc0105(r), asc0106(r)
      data_wid1$asc_math <- rowMeans(data_wid1[c("asc0103.r", "asc0104.r", "asc0105.r", "asc0106.r")], na.rm = TRUE)
      ```


```{r Cognitive Abilities 2}
## Self-perceived ability
## recoding the variables according to the manual
      data_wid1$spa0100.r <- recode(data_wid1$spa0100, "1=1; 2=0")


## Self-perceived ability in general, self-report (school attendees)
## inverted item
      data_wid1$spa0202.r <- recode(data_wid1$spa0202, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$spagen <- rowMeans(data_wid1[c("spa0200", "spa0201", "spa0202.r")], na.rm = TRUE)

## Self-perceived ability in general, parental report (preschool children)
## computing mean for every row
## Scale general self-perceived ability twin1: parental report of school attendees (mean)
      data_wid1$spa_prt <-  rowMeans(data_wid1[c("spa0100t", "spa0202t")], na.rm = TRUE)
## Scale general self-perceived ability twin2: parental report of school attendees (mean)
      data_wid1$spa_pru <-  rowMeans(data_wid1[c("spa0100u", "spa0202u")], na.rm = TRUE)
## Scale general self-perceived ability sibling: parental report of school attendees (mean)
```

```
      data_wid1$spa_prs <-  rowMeans(data_wid1[c("spa0100s", "spa0202s")], na.rm = TRUE)

## Self-perceived ability math, self-report (school attendees).
## inverted item spa0202
      data_wid1$spa0302.r <- recode(data_wid1$spa0302, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$spamath <-  rowMeans(data_wid1[c("spa0300", "spa0301", "spa0302.r")], na.rm
      = TRUE)

## Self-perceived ability German, self-report (school attendees).
## inverted item spa0202
      data_wid1$spa0402.r <- recode(data_wid1$spa0402, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$spager  <-  rowMeans(data_wid1[c("spa0400", "spa0401", "spa0402.r")], na.rm
      = TRUE)

## self-perceived job ability, self-report (aged 16 or older).
      ## computing mean for every row
      data_wid1$spajob  <-  rowMeans(data_wid1[c("spa0500", "spa0501", "spa0502",
      "spa0503", "spa0504")], na.rm = TRUE)
      ```


Motivation
```{r Motivation 1}
## Intrinsic motivation
## Anticipated intrinsic motivation, self-report (preschool children)
## recoding the variables according to the manual
      data_wid1$imo0100.r <- recode(data_wid1$imo0100, "1=1; 2=0")
      data_wid1$imo0101.r <- recode(data_wid1$imo0101, "1=1; 2=0")
      data_wid1$imo0102.r <- recode(data_wid1$imo0102, "1=1; 2=0")
## computing mean for every row
      data_wid1$imoanti  <- rowMeans(data_wid1[c("imo0100.r","imo0102.r","imo0103.r")],
      na.rm = TRUE)

## Anticipated intrinsic motivation, parental report (preschool children).
## Scale general anticipated intrinsic motivation twin1: parental report of preschool
children (mean)
## computing mean for every row
      data_wid1$imo_prt  <-  rowMeans(data_wid1[c("imo0100t", "imo0101t", "imo0102t")],
      na.rm = TRUE)
## Scale general anticipated intrinsic motivation twin2: parental report of preschool
children (mean)
## computing mean for every row
      data_wid1$imo_pru  <-  rowMeans(data_wid1[c("imo0100u", "imo0101u", "imo0102u")],
      na.rm = TRUE)
## Scale general anticipated intrinsic motivation sibling: parental report of preschool
children (mean)
## computing mean for every row
      data_wid1$imo_prs  <-  rowMeans(data_wid1[c("imo0100s", "imo0101s", "imo0102s")],
      na.rm = TRUE)

## Intrinsic motivation in general, self-report (school attendees)
## computing mean for every row
      data_wid1$imogen  <-  rowMeans(data_wid1[c("imo0200","imo0201","imo0202")], na.rm =
      TRUE)

## Intrinsic motivation math, self-report (school attendees)
## computing mean for every row
      data_wid1$imomath  <-  rowMeans(data_wid1[c("imo0300", "imo0301", "imo0302")], na.rm
      = TRUE)

## Intrinsic motivation German, self-report (school attendees)
## computing mean for every row
      data_wid1$imoger  <-  rowMeans(data_wid1[c("imo0400", "imo0401", "imo0402")], na.rm =
      TRUE)
```
```
```

```{r Motivation 2}
## Learning motivation
## Anticipated learning motivation, self-report (preschool children)
## recoding the variables according to the manual
      data_wid1$imo0103.r <- recode(data_wid1$imo0103, "1=1; 2=0")
      data_wid1$imo0104.r <- recode(data_wid1$imo0104, "1=1; 2=0")
      data_wid1$imo0105.r <- recode(data_wid1$imo0105, "1=1; 2=0")
## computing mean for every row
      data_wid1$imoantilearn <- rowMeans(data_wid1[c("imo0103.r", "imo0104.r",
      "imo0105.r")], na.rm = TRUE)

## Learning motivation in general, self-report (school attendees aged 9/10 or younger)
## computing mean for every row
      data_wid1$imolearn1  <-  rowMeans(data_wid1[c("imo0550", "imo0551", "imo0552")],
      na.rm = TRUE)
## Learning motivation in general, self-report (school attendees aged 10/11 or older)
## computing mean for every row
      data_wid1$imolearn2  <-  rowMeans(data_wid1[c("imo0500", "imo0501", "imo0502")],
      na.rm = TRUE)

## Job learning motivation in general, self-report (aged 16 or older).
## computing mean for every row
      data_wid1$imojob  <-  rowMeans(data_wid1[c("imo0600", "imo0601", "imo0602")], na.rm =
      TRUE)
```

```{r Motivation 3}
## Achievement motivation
## Achievement motivation, self-report report (age 7 to 15), one-item-scale: imo0701

## Achievement motivation, self-report (aged 16 or older).
## computing mean for every row
      data_wid1$imoachiev  <-  rowMeans(data_wid1[c("imo0700", "imo0702")], na.rm = TRUE)

## Achievement motivation, parental report report (school attendees), one-item-scale:
imo0701(t/u/s).

```


Self-Efficacy
```{r Self-Efficacy}
## Self-efficacy (self-report, aged 10 or older).
## computing mean for every row
      data_wid1$sef  <-  rowMeans(data_wid1[c("sef0100", "sef0101", "sef0102")], na.rm =
      TRUE)
      ```
Self-Esteem
```{r Self-Esteem}
## self-esteem, self-report
## inverted item
      data_wid1$ses0100.r <- recode(data_wid1$ses0100, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$ses  <-  rowMeans(data_wid1[c("ses0100.r", "ses0101", "ses0102")], na.rm =
      TRUE)

## self-esteem parental report (children aged 5 to 12).
## Scale self-esteem twin1: parental report (mean)
## computing mean for every row
      data_wid1$ses_prt  <-  rowMeans(data_wid1[c("ses0200t", "ses0102t")], na.rm = TRUE)
## Scale self-esteem twin2: parental report (mean)
## computing mean for every row
      data_wid1$ses_pru  <-  rowMeans(data_wid1[c("ses0200u", "ses0102u")], na.rm = TRUE)
## Scale self-esteem sibling: parental report (mean)
## computing mean for every row
      data_wid1$ses_prs  <-  rowMeans(data_wid1[c("ses0200s", "ses0102s")], na.rm = TRUE)
```

Self-Regulation
```{r Self-Regulation}
## Caution: In this case, higher values mean a lower trait manifestation.
## consistency of interest self-report (aged 10 or older).
## computing mean for every row
      data_wid3$srgcoi  <-  rowMeans(data_wid3[c("srg0100", "srg0200", "srg0300")], na.rm =
      TRUE)



## Self-control self-report (aged 10 or older).
## computing mean for every row
      data_wid3$srgsc  <-  rowMeans(data_wid3[c("srg0400", "srg0500", "srg0600")], na.rm =
      TRUE)

## Self-control parental report (children aged 5 to 9).
## Scale self-control twin1: parental report (mean)
## computing mean for every row
      data_wid3$srg_prt  <-  rowMeans(data_wid3[c("srg0400t", "srg0500t", "srg0600t")],
      na.rm = TRUE)
## Scale self-control twin2: parental report (mean)
## computing mean for every row
      data_wid3$srg_pru  <-  rowMeans(data_wid3[c("srg0400u", "srg0500u", "srg0600u")],
      na.rm = TRUE)
## Scale self-control sibling: parental report (mean)
## computing mean for every row
      data_wid3$srg_prs  <-  rowMeans(data_wid3[c("srg0400s", "srg0500s", "srg0600s")],
      na.rm = TRUE)
```
Personality
```{r Personality 1 }
## personality self-report (aged 10 or older).
## Scale personality openness: self-report (mean)
## addtional item per0116 not included
## computing mean for every row
      data_wid1$peropen  <-  rowMeans(data_wid1[c("per0103", "per0108", "per0113",
      "per0115")], na.rm = TRUE)

## Scale personality conscientiousness: self-report (mean)
## inverted item
      data_wid1$per0106.r <- recode(data_wid1$per0106, "1=7; 2=6; 3=5; 4=4; 5=3; 6=2; 7=1")
## computing mean for every row
      data_wid1$percons  <-  rowMeans(data_wid1[c("per0100", "per0106.r", "per0110")],
      na.rm = TRUE)

## Scale personality extraversion: self-report (mean)
## inverted item
      data_wid1$per0111.r <- recode(data_wid1$per0111, "1=7; 2=6; 3=5; 4=4; 5=3; 6=2; 7=1")
## computing mean for every row
      data_wid1$perextr  <-  rowMeans(data_wid1[c("per0101", "per0111.r", "per0107")],
      na.rm = TRUE)

## Scale personality agreeableness: self-report (mean)
## inverted item
      data_wid1$per0102.r <- recode(data_wid1$per0102, "1=7; 2=6; 3=5; 4=4; 5=3; 6=2; 7=1")
## computing mean for every row
      data_wid1$peragre  <-  rowMeans(data_wid1[c("per0102.r", "per0105", "per0112")],
      na.rm = TRUE)

## Scale personality neuroticism: self-report (mean)
## inverted item
      data_wid1$per0114.r <- recode(data_wid1$per0114, "1=7; 2=6; 3=5; 4=4; 5=3; 6=2; 7=1")
## computing mean for every row
      data_wid1$perneur  <-  rowMeans(data_wid1[c("per0114.r", "per0109", "per0104")],
      na.rm = TRUE)

      ```

```{r Personality 2}
## personality, parental report (children aged 5 to 9).
## Scale personality openness twin1: parental report (mean)
## inverted item
      data_wid1$per0408t.r <- recode(data_wid1$per0408t, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peropen_prt  <-  rowMeans(data_wid1[c("per0403t", "per0408t.r")], na.rm =
      TRUE)

## Scale personality conscientiousness twin1: parental report (mean)
## inverted item
      data_wid1$per0406t.r <- recode(data_wid1$per0406t, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$percons_prt  <-  rowMeans(data_wid1[c("per0401t", "per0406t.r")], na.rm =
      TRUE)

## Scale personality extraversion twin1: parental report (mean)
## inverted item
      data_wid1$per0400t.r <- recode(data_wid1$per0400t, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perextr_prt  <-  rowMeans(data_wid1[c("per0400t.r", "per0405t")], na.rm =
      TRUE)

## Scale personality agreeableness twin1: parental report (mean)
## inverted item
      data_wid1$per0402t.r <- recode(data_wid1$per0402t, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peragre_prt  <-  rowMeans(data_wid1[c("per0402t.r", "per0407t")], na.rm =
      TRUE)

## Scale personality neuroticism twin1: parental report (mean)
## inverted item
      data_wid1$per0409t.r <- recode(data_wid1$per0409t, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perneur_prt  <-  rowMeans(data_wid1[c("per0404t", "per0409t.r")], na.rm =
      TRUE)

## Scale personality openness twin2: parental report (mean)
## inverted item
      data_wid1$per0408u.r <- recode(data_wid1$per0408u, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peropen_pru  <-  rowMeans(data_wid1[c("per0403u", "per0408u.r")], na.rm =
      TRUE)

## Scale personality conscientiousness twin2: parental report (mean)
## inverted item
      data_wid1$per0406u.r <- recode(data_wid1$per0406u, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$percons_pru  <-  rowMeans(data_wid1[c("per0401u", "per0406u.r")], na.rm =
      TRUE)

## Scale personality extraversion twin2: parental report (mean)
## inverted item
      data_wid1$per0400u.r <- recode(data_wid1$per0400u, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perextr_pru  <-  rowMeans(data_wid1[c("per0400u.r", "per0405u")], na.rm =
      TRUE)
```

```
## Scale personality agreeableness twin2: parental report (mean)
## inverted item
      data_wid1$per0402u.r <- recode(data_wid1$per0402u, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peragre_pru  <-  rowMeans(data_wid1[c("per0402u.r", "per0407u")], na.rm =
      TRUE)

## Scale personality neuroticism twin2: parental report (mean)
## inverted item
      data_wid1$per0409u.r <- recode(data_wid1$per0409u, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perneur_pru  <-  rowMeans(data_wid1[c("per0404u", "per0409u.r")], na.rm =
      TRUE)

## Scale personality openness sibling: parental report (mean)
## inverted item
      data_wid1$per0408s.r <- recode(data_wid1$per0408s, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peropen_prs  <-  rowMeans(data_wid1[c("per0403s", "per0408s.r")], na.rm =
      TRUE)

## Scale personality conscientiousness sibling: parental report (mean)
## inverted item
      data_wid1$per0406s.r <- recode(data_wid1$per0406s, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$percons_prs  <-  rowMeans(data_wid1[c("per0401s", "per0406s.r")], na.rm =
      TRUE)

## Scale personality extraversion sibling: parental report (mean)
## inverted item
      data_wid1$per0400s.r <- recode(data_wid1$per0400s, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perextr_prs  <-  rowMeans(data_wid1[c("per0400s.r", "per0405s")], na.rm =
      TRUE)

## Scale personality agreeableness sibling: parental report (mean)
## inverted item
      data_wid1$per0402s.r <- recode(data_wid1$per0402s, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$peragre_prs  <-  rowMeans(data_wid1[c("per0402s.r", "per0407s")], na.rm =
      TRUE)

## Scale personality neuroticism sibling: parental report (mean)
## inverted item
      data_wid1$per0409s.r <- recode(data_wid1$per0409s, "0=10; 1=9; 2=8; 3=7; 4=6; 5=5;
      6=4; 7=3; 8=2; 9=1; 10=0")
## computing mean for every row
      data_wid1$perneur_prs  <-  rowMeans(data_wid1[c("per0404s", "per0409s.r")], na.rm =
      TRUE)
      ```

Narcissism
```{r Narcissism }
## Self-report – Naughty Nine
## computing mean for every row
      data_wid5$nine  <-  rowMeans(data_wid5[c("nar0100", "nar0101", "nar0102")], na.rm =
      TRUE)

## Self-report – NPQC-R: Superiority
## computing mean for every row
      data_wid5$narsup  <-  rowMeans(data_wid5[c("nar0200", "nar0201")], na.rm = TRUE)
```

```
## Self-report – NPQC-R: Exploitativeness
## computing mean for every row
      data_wid5$narexp  <-  rowMeans(data_wid5[c("nar0202", "nar0203")], na.rm = TRUE)
```
Fear of Failure
```{r Fear of Failure }
## performance failure appraisal inventory - short form: self-report
## computing mean for every row
      data_wid5$fof  <-  rowMeans(data_wid5[c("fof0100", "fof0101", "fof0102", "fof0103",
      "fof0104")], na.rm = TRUE)
```
Media use
```{r Media use}
## Problematic Smartphone use: self-report
## computing mean for every row
      data_wid5$med  <-  rowMeans(data_wid5[c("med1200", "med1201", "med1202", "med1203")],
      na.rm = TRUE)
```


Career, Labor Market Attainment, and Welfare
Job Autonomy
```{r Job Autonomy}
## Job autonomy (self-report, all employed participants).
## inverted item
      data_wid3$aut0103.r <- recode(data_wid3$aut0103, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid3$jobaut  <-  rowMeans(data_wid3[c("aut0101", "aut0102", "aut0103.r")], na.rm
      = TRUE)
```

Political and Social Integration and Participation
Cultural Capital
```{r Cultural Capital}
## Embodied cultural capital (self-report, aged 10 or older).
## recoding the variables according to the manual
      data_wid3$cul0201.r <- recode(data_wid3$cul0201, "1=1; 2=0")
      data_wid3$cul0202.r <- recode(data_wid3$cul0202, "1=1; 2=0")
      data_wid3$cul0203.r <- recode(data_wid3$cul0203, "1=1; 2=0")
      data_wid3$cul0204.r <- recode(data_wid3$cul0204, "1=1; 2=0")
      data_wid3$cul0205.r <- recode(data_wid3$cul0205, "1=1; 2=0")
## computing mean for every row
      data_wid3$culcap  <-  rowMeans(data_wid3[c("cul0201.r", "cul0202.r", "cul0203.r",
      "cul0204.r", "cul0205.r")], na.rm = TRUE)

## cultural involvement (self-report, aged 10 or older).
## recoding the variables acCording to the manual
      data_wid3$cul0401.r <- recode(data_wid3$cul0401, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid3$cul0402.r <- recode(data_wid3$cul0402, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid3$cul0403.r <- recode(data_wid3$cul0403, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid3$cul0404.r <- recode(data_wid3$cul0404, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid3$culinv  <-  rowMeans(data_wid3[c("cul0401.r", "cul0402.r", "cul0403.r",
      "cul0404.r")], na.rm = TRUE)


## participation in high culture (self-report, aged 10 or older)
## acctional items cul0502, cul0505 not included
## computing mean for every row
      data_wid3$culhigh  <-  rowMeans(data_wid3[c("cul0501", "cul0503", "cul0504")], na.rm
      = TRUE)

## participation in high culture (parental report, aged 5 to 9).
## Scale participation in high culture: parental report for twin 1 (mean)
## computing mean for every row
```

```
      data_wid3$culhigh_prt  <-  rowMeans(data_wid3[c("cul0501t", "cul0503t", "cul0504t")],
      na.rm = TRUE)

## Scale participation in high culture: parental report for twin 2 (mean)
## computing mean for every row
      data_wid3$culhigh_pru  <-  rowMeans(data_wid3[c("cul0501u", "cul0503u", "cul0504u")],
      na.rm = TRUE)

## Scale participation in high culture: parental report for sibling (mean)
## computing mean for every row
      data_wid3$culhigh_prs  <-  rowMeans(data_wid3[c("cul0501s", "cul0503s", "cul0504s")],
      na.rm = TRUE)
```
Social Trust
```{r Social Trust}
## Social Trust: self-report
## inverted items
      data_wid1$net0101.r <- recode(data_wid1$net0101, "1=4; 2=3; 3=2; 4=1")
      data_wid1$net0102.r <- recode(data_wid1$net0102, "1=4; 2=3; 3=2; 4=1")
## computing mean for every row
      data_wid1$net  <-  rowMeans(data_wid1[c("net0100", "net0101.r", "net0102.r")], na.rm
      = TRUE)
```
Right-Wing Authoritarianism
```{r Right-Wing Authoritarianism }
## Right-Wing Authoritarianism scale: self-report
## inverted item
      data_wid5$rwa0101.r <- recode(data_wid5$rwa0101, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid5$rwa0102.r <- recode(data_wid5$rwa0102, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid5$rwa  <-  rowMeans(data_wid5[c("rwa0100", "rwa0101.r", "rwa0102.r",
      "rwa0103")], na.rm = TRUE)
```
Social Dominance Orientation
```{r Social Dominance Orientation}
## Social Dominance Orientation: self-report
## inverted item
      data_wid5$sdo0102.r <- recode(data_wid5$sdo0102, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid5$sdo  <-  rowMeans(data_wid5[c("sdo0100", "sdo0101", "sdo0102.r",
      "sdo0103")], na.rm = TRUE)
```

Subjective Perception of Quality of Life
Global Life Satisfaction
```{r Global Life Satisfaction}
## global life satisfaction, self-report (aged 10 to 15).
## computing mean for every row
      data_wid1$gls_1  <-  rowMeans(data_wid1[c("gls0600", "gls0700", "gls0800", "gls0900",
      "gls1000")], na.rm = TRUE)

## global life satisfaction, self-report (aged 16 and older).
## computing mean for every row
      data_wid1$gls_2  <-  rowMeans(data_wid1[c("gls0100", "gls0200", "gls0300", "gls0400",
      "gls0500")], na.rm = TRUE)
```
Optimism
```{r Optimism}
## Optimism, self-report (aged 10 or older).
## computing mean for every row
      data_wid3$lot  <-  rowMeans(data_wid3[c("lot0100", "lot0101", "lot0102")], na.rm =
      TRUE)
```
Burden and Stress
```{r Burden and Stress }
### Burden and stress related to parenthood, self-report (aged 16  or  older  and  having
a  child)
```

```
## computing mean for every row
      data_wid3$ebi  <-  rowMeans(data_wid3[c("ebi0100", "ebi0101", "ebi0102", "ebi0103",
      "ebi0104", "ebi0105")], na.rm = TRUE)

## Stress regulation and coping, self-report (aged 5 to 15).
## scale stress task orientation: self-report (aged 15 or younger, mean)
## computing mean for every row
      data_wid3$svktas  <-  rowMeans(data_wid3[c("svk0100", "svk0103", "svk0106")], na.rm =
      TRUE)

## scale stress emotional coping: self-report (aged 15 or younger, mean)
## computing mean for every row
      data_wid3$svkemo  <-  rowMeans(data_wid3[c("svk0101", "svk0104", "svk0107")], na.rm =
      TRUE)

## scale stress distraction: self-report (aged 15 or younger, mean)
## computing mean for every row
      data_wid3$svkdis  <-  rowMeans(data_wid3[c("svk0102", "svk0105", "svk0108")], na.rm =
      TRUE)

## Stress regulation and coping, self-report (aged 16 or older).
## scale stress task orientation: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$cistas  <-  rowMeans(data_wid3[c("cis0100", "cis0103", "cis0106")], na.rm =
      TRUE)
# scale stress emotional coping: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$cisemo  <-  rowMeans(data_wid3[c("cis0101", "cis0104", "cis0107")], na.rm =
      TRUE)

## scale stress distraction: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$cisdis <-  rowMeans(data_wid3[c("cis0102", "cis0105", "cis0108")], na.rm =
      TRUE)

### Locus of control

## scale internal locus of control: self-report (aged 15 or younger, mean)
## computing mean for every row
      data_wid3$locint_1 <-  rowMeans(data_wid3[c("loc0100", "loc0102")], na.rm = TRUE)

##scale external locus of control: self-report (aged 15 or younger, mean)
## computing mean for every row
      data_wid3$locext_1 <-  rowMeans(data_wid3[c("loc0101", "loc0103")], na.rm = TRUE)

## Locus of control, self-report (aged 16 or older).
## scale internal locus of control: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$locint_2 <-  rowMeans(data_wid3[c("loc0200", "loc0202")], na.rm = TRUE)

## scale external locus of control: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$locext_2 <-  rowMeans(data_wid3[c("loc0201", "loc0203")], na.rm = TRUE)
```


Life Goals
```{r Life Goals}
## Life Goals, self-report (aged 16 or older)
## scale life goals success: self-report (mean)
## computing mean for every row
      data_wid3$lgdsuc  <-  rowMeans(data_wid3[c("lgd0101", "lgd0102", "lgd0105")], na.rm =
      TRUE)

## scale life goals family life: self-report (mean)
## computing mean for every row
      data_wid3$lgdfam <-  rowMeans(data_wid3[c("lgd0103", "lgd0104")], na.rm = TRUE)
```

Sensory Processing Sensitivity
```{r Sensory Processing Sensitivity}
## Sensory processing sensitivity, self-report (between 10 and 15 years of age).
## scale ease of excitation: self-report (between 10y and 15y, mean)
## computing mean for every row
      data_wid3$spseas_1 <-  rowMeans(data_wid3[c("sps0102", "sps0104")], na.rm = TRUE)

##scale aesthetic sensitivity: self-report (between 10y and 15y, mean)
## computing mean for every row
      data_wid3$spsaes_1 <-  rowMeans(data_wid3[c("sps0101", "sps0103")], na.rm = TRUE)
## scale low sensory threshold: self-report (between 10y and 15y, mean
## computing mean for every row
      data_wid3$spssen_1 <-  rowMeans(data_wid3[c("sps0100", "sps0105")], na.rm = TRUE)

## Sensory processing sensitivity, self-report (aged 16 or older).
## scale ease of excitation: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$spseas_2 <-  rowMeans(data_wid3[c("sps0202", "sps0204")], na.rm = TRUE)
## scale aesthetic sensitivity: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$spsaes_1 <-  rowMeans(data_wid3[c("sps0201", "sps0203")], na.rm = TRUE)
## scale low sensory threshold: self-report (aged 16 or older, mean)
## computing mean for every row
      data_wid3$spssen_1 <-  rowMeans(data_wid3[c("sps0200", "sps0205")], na.rm = TRUE)
```
Bullying
```{r Bullying}
## Frequency of bullying, self-report (age 10 or older).
## computing mean for every row
      data_wid3$bulfreq_1  <-  rowMeans(data_wid3[c("bul0100", "bul0200", "bul0300",
      "bul0400")], na.rm = TRUE)

## Burden of bullying, self-report (age 10 or older).
## computing mean for every row
      data_wid3$bulburd_1  <-  rowMeans(data_wid3[c("bul0101", "bul0201", "bul0301",
      "bul0401")], na.rm = TRUE)

## Frequency of bullying, self-report (age 5 to 9).
## computing mean for every row
      data_wid3$bulfreq_2  <-  rowMeans(data_wid3[c("bul0500", "bul0600", "bul0700",
      "bul0800")], na.rm = TRUE)

## Burden of bullying, self-report (age 5 to 9).
## computing mean for every row
      data_wid3$bulburd_1  <-  rowMeans(data_wid3[c("bul0501", "bul0601", "bul0701",
      "bul0801")], na.rm = TRUE)
```
Emotional impairment
```{r Emotional impairment}
## Worrying – Generalized Anxiety Disorder: self report (Participants aged 11 or older)
## computing mean for every row
      data_wid5$gad  <-  rowMeans(data_wid5[c("emi0102", "emi0103")], na.rm = TRUE)
```

Injustice Sensitivity
```{r Injustice Sensitivity}
## Victim sensitivity – Self report
## computing mean for every row
      data_wid5$vicsen  <-  rowMeans(data_wid5[c("ugs0100", "ugs0101")], na.rm = TRUE)

## Social structure – Self report: one-item scale: ugs0200
```

Physical and Psychological Health
Depression
```{r Depression}
```

```
## Depression, self-report (aged 10 or older).
## computing mean for every row
      data_wid3$bdi  <-  rowMeans(data_wid3[c("bdi0100", "bdi0101", "bdi0102", "bdi0103",
      "bdi0104", "bdi0105", "bdi0106")], na.rm = TRUE)
      ```

Psychopathology and Deviant Behavior
Internalizing Problem Behavior
```{r Internalizing Problem Behavior 1}
## Internalizing problem behavior
## Internalizing problem behavior, self-report (aged 10 or older).
## please note: int0108 & int0109 were only asked if participant was aged 17 or younger,
whereas int0110 and int0111 were asked for participants aged 18 or older;
## these items correspond in content: int0108 corresponds to int0111; int0109 corresponds
to int0110.
## scale internalizing emotional symptoms: self-report (mean)
## computing mean for every row
      data_wid1$intemo  <-  rowMeans(data_wid1[c("int0100", "int0101", "int0102",
      "int0103", "int0104")], na.rm = TRUE)

## scale internalizing peer problems: self-report (mean)
## inverted item
      data_wid1$int0106.r <- recode(data_wid1$int0106, "1=3; 2=2; 3=1")
      data_wid1$int0107.r <- recode(data_wid1$int0107, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$intpeer  <-  rowMeans(data_wid1[c("int0105", "int0106.r", "int0107.r",
      "int0108", "int0109", "int0110", "int0111")], na.rm = TRUE)
```

```{r Internalizing Problem Behavior 2}
## Internalizing problem behavior, parental report (children aged 5 to 9).
## twin1: parental report
## scale Internalizing emotional symptoms twin1: parental report (mean)
## computing mean for every row
      data_wid1$intemo_t  <-  rowMeans(data_wid1[c("int0100t", "int0101t", "int0102t",
      "int0103t", "int0104t")], na.rm = TRUE)

## scale internalizing peer problems twin1: parental report (mean)
## inverted item
      data_wid1$int0106t.r <- recode(data_wid1$int0106t, "1=3; 2=2; 3=1")
      data_wid1$int0107t.r <- recode(data_wid1$int0107t, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$intpeer_t  <-  rowMeans(data_wid1[c("int0105t", "int0106t.r", "int0107t.r",
      "int0108t", "int0109t")], na.rm = TRUE)

## twin2: parental report
## scale Internalizing emotional symptoms twin2: parental report (mean)
## computing mean for every row
      data_wid1$intemo_u  <-  rowMeans(data_wid1[c("int0100u", "int0101u", "int0102u",
      "int0103u", "int0104u")], na.rm = TRUE)

## scale internalizing peer problems twin2: parental report (mean)
## inverted item
      data_wid1$int0106u.r <- recode(data_wid1$int0106u, "1=3; 2=2; 3=1")
      data_wid1$int0107u.r <- recode(data_wid1$int0107u, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$intpeer_u  <-  rowMeans(data_wid1[c("int0105u", "int0106u.r", "int0107u.r",
      "int0108u", "int0109u")], na.rm = TRUE)

## sibling: parental report
## scale Internalizing emotional symptoms sibling: parental report (mean)
## scale internalizing emotional symptoms: self-report (mean)
## computing mean for every row
      data_wid1$intemo_s  <-  rowMeans(data_wid1[c("int0100s", "int0101s", "int0102s",
      "int0103s", "int0104s")], na.rm = TRUE)

## scale internalizing peer problems sibling: parental report (mean)
```

```
## inverted item
      data_wid1$int0106s.r <- recode(data_wid1$int0106s, "1=3; 2=2; 3=1")
      data_wid1$int0107s.r <- recode(data_wid1$int0107s, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$intpeer_s  <-  rowMeans(data_wid1[c("int0105s", "int0106s.r", "int0107s.r",
      "int0108s", "int0109s")], na.rm = TRUE)
      ```

Externalizing Problem Behavior
```{r Externalizing Problem Behavior 1}
## Externalizing problem behavior, self-report (aged 10 or older).
## please note: ext0101 was not assessed for participants aged 18 or older.
## scale externalizing hyperactivity: self-report (mean)
## inverted item
      data_wid1$ext0103.r <- recode(data_wid1$ext0103, "1=3; 2=2; 3=1")
      data_wid1$ext0104.r <- recode(data_wid1$ext0104, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$exthyp  <-  rowMeans(data_wid1[c("ext0100", "ext0101", "ext0102",
      "ext0103.r", "ext0104.r")], na.rm = TRUE)

## scale externalizing conduct problems: self-report (mean)
## inverted item
      data_wid1$ext0106.r <- recode(data_wid1$ext0106, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$extcon  <-  rowMeans(data_wid1[c("ext0105", "ext0106.r", "ext0107",
      "ext0108", "ext0109")], na.rm = TRUE)
```

```{r Externalizing Problem Behavior 2}
## Externalizing problem behavior, parental report (children aged 5 to 9).
## twin1: parental report
## scale externalizing hyperactivity twin1: parental report (mean)
## inverted item
      data_wid1$ext0102t.r <- recode(data_wid1$ext0102t, "1=3; 2=2; 3=1")
      data_wid1$ext0103t.r <- recode(data_wid1$ext0103t, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$exthyp_prt  <-  rowMeans(data_wid1[c("ext0100t", "ext0109t", "ext0101t",
      "ext0102t.r", "ext0103t.r")], na.rm = TRUE)

## scale externalizing conduct problems twin1: parental report (mean)
## inverted item
      data_wid1$ext0105t.r <- recode(data_wid1$ext0105t, "1=3; 2=2; 3=1")

## computing mean for every row
      data_wid1$extcond_prt  <-  rowMeans(data_wid1[c("ext0104t", "ext0105t.r", "ext0106t",
      "ext0107t", "ext0108t")], na.rm = TRUE)

## twin2:parental report
## scale externalizing hyperactivity twin2:parental report (mean)
## inverted item
      data_wid1$ext0102u.r <- recode(data_wid1$ext0102u, "1=3; 2=2; 3=1")
      data_wid1$ext0103u.r <- recode(data_wid1$ext0103u, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$exthyp_pru  <-  rowMeans(data_wid1[c("ext0100u", "ext0109u", "ext0101u",
      "ext0102u.r", "ext0103u.r")], na.rm = TRUE)

## scale externalizing conduct problems twin2:parental report (mean)
## inverted item
      data_wid1$ext0105u.r <- recode(data_wid1$ext0105u, "1=3; 2=2; 3=1")

## computing mean for every row
      data_wid1$extcond_pru  <-  rowMeans(data_wid1[c("ext0104u", "ext0105u.r", "ext0106u",
      "ext0107u", "ext0108u")], na.rm = TRUE)

## sibling: parental report
## scale externalizing hyperactivity sibling: parental report (mean)
## inverted item
```

```
      data_wid1$ext0102s.r <- recode(data_wid1$ext0102s, "1=3; 2=2; 3=1")
      data_wid1$ext0103s.r <- recode(data_wid1$ext0103s, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$exthyp_prs  <-  rowMeans(data_wid1[c("ext0100s", "ext0109s", "ext0101s",
      "ext0102s.r", "ext0103s.r")], na.rm = TRUE)

## scale externalizing conduct problems sibling: parental report (mean)
## inverted item
      data_wid1$ext0105s.r <- recode(data_wid1$ext0105s, "1=3; 2=2; 3=1")

## computing mean for every row
      data_wid1$extcond_prs  <-  rowMeans(data_wid1[c("ext0104s", "ext0105s.r", "ext0106s",
      "ext0107s", "ext0108s")], na.rm = TRUE)

```


Deviant and Delinquent Behavior
```{r Deviant and Delinquent Behavior}
## Deviant and delinquent behavior, self-report (aged 5 to 9).
## scale deviant behavior conduct problems: self-report (mean)
## inverted item
      data_wid1$dev0101.r <- recode(data_wid1$dev0101, "1=3; 2=2; 3=1")
## computing mean for every row
      data_wid1$devcond  <-  rowMeans(data_wid1[c("dev0100", "dev0101.r", "dev0102",
      "dev0103")], na.rm = TRUE)
```


Environment
School Context
```{r School Context}
## School climate / relationship to teachers
## Student teacher interaction, self-report (school attendees aged 13 or older).
## computing mean for every row
      data_wid3$eduint  <-  rowMeans(data_wid3[c("edu0700", "edu0701", "edu0800",
      "edu0801", "edu0802")], na.rm = TRUE)

## Subjective burden at school, self-report (school attendees aged 13 or older).
## computing mean for every row
      data_wid3$eduburd  <-  rowMeans(data_wid3[c("edu0901", "edu0902", "edu0903",
      "edu0904", "edu0905", "edu0906", "edu0907")], na.rm = TRUE)
```


Parental Behavior and Involvement
```{r Parental Behavior and Involvement 1}
## Parental involvement, self-report (F2F1: school attendees aged 9 or older; F2F2: school
attendees aged 10 to 20).
## scale parental involvement structure: self-report (mean)
## computing mean for every row
      data_wid1$invstru  <-  rowMeans(data_wid1[c("inv0100", "inv0101", "inv0102")], na.rm
      = TRUE)

## scale parental involvement emotional support: self-report (mean)
## computing mean for every row
      data_wid1$invemo  <-  rowMeans(data_wid1[c("inv0103", "inv0104", "inv0105")], na.rm =
      TRUE)

## scale parental involvement autonomy: self-report (mean)
## computing mean for every row
      data_wid1$invaut  <-  rowMeans(data_wid1[c("inv0106", "inv0107", "inv0108")], na.rm =
      TRUE)

## scale parental involvement control: self-report (mean)
## computing mean for every row
      data_wid1$invcon  <-  rowMeans(data_wid1[c("inv0109", "inv0110", "inv0111")], na.rm =
      TRUE)

## Parenting Style, parental report (F2F1 only).
```

```
## parents on twin1
## parents on twin1: parenting scale warmth (mean)
## computing mean for every row
      data_wid1$parwarm_prt  <-  rowMeans(data_wid1[c("par0100t", "par0101t", "par0102t",
      "par0103t")], na.rm = TRUE)
## parents on twin1: parenting scale psych. control (mean)
## computing mean for every row
      data_wid1$parcont_prt <-  rowMeans(data_wid1[c("par0104t", "par0105t", "par0106t")],
      na.rm = TRUE)
## parents on twin1: parenting scale negative communication (mean)
## computing mean for every row
      data_wid1$parnegc_prt <-  rowMeans(data_wid1[c("par0107t", "par0108t")], na.rm =
      TRUE)
## parents on twin1: parenting scale monitoring (mean)
## computing mean for every row
      data_wid1$parmoni_prt <-  rowMeans(data_wid1[c("par0109t", "par0110t")], na.rm =
      TRUE)
## parents on twin1: parenting scale inconsistent parenting (mean)
## computing mean for every row
      data_wid1$parinco_prt <-  rowMeans(data_wid1[c("par0111t", "par0112t")], na.rm =
      TRUE)

## Parenting Style, parental report (F2F1 only).
## parents on twin2
## parents on twin2: parenting scale warmth (mean)
## computing mean for every row
      data_wid1$parwarm_pru  <-  rowMeans(data_wid1[c("par0100u", "par0101u", "par0102u",
      "par0103u")], na.rm = TRUE)
## parents on twin2: parenting scale psych. control (mean)
## computing mean for every row
      data_wid1$parcont_pru <-  rowMeans(data_wid1[c("par0104u", "par0105u", "par0106u")],
      na.rm = TRUE)
## parents on twin2: parenting scale negative communication (mean)
## computing mean for every row
      data_wid1$parnegc_pru <-  rowMeans(data_wid1[c("par0107u", "par0108u")], na.rm =
      TRUE)
## parents on twin2: parenting scale monitoring (mean)
## computing mean for every row
      data_wid1$parmoni_pru <-  rowMeans(data_wid1[c("par0109u", "par0110u")], na.rm =
      TRUE)
## parents on twin2: parenting scale inconsistent parenting (mean)
## computing mean for every row
      data_wid1$parinco_pru <-  rowMeans(data_wid1[c("par0111u", "par0112u")], na.rm =
      TRUE)

## Parenting Style, parental report (F2F1 only).
## parents on siblings:
## parents on siblings: parenting scale warmth (mean)
## computing mean for every row
      data_wid1$parwarm_prs  <-  rowMeans(data_wid1[c("par0100s", "par0101s", "par0102s",
      "par0103s")], na.rm = TRUE)
## parents on siblings: parenting scale psych. control (mean)
## computing mean for every row
      data_wid1$parcont_prs <-  rowMeans(data_wid1[c("par0104s", "par0105s", "par0106s")],
      na.rm = TRUE)
## parents on siblings: parenting scale negative communication (mean)
## computing mean for every row
      data_wid1$parnegc_prs <-  rowMeans(data_wid1[c("par0107s", "par0108s")], na.rm =
      TRUE)
## parents on siblings: parenting scale monitoring (mean)
## computing mean for every row
      data_wid1$parmoni_prs <-  rowMeans(data_wid1[c("par0109s", "par0110s")], na.rm =
      TRUE)
## parents on siblings: parenting scale inconsistent parenting (mean)
## computing mean for every row
      data_wid1$parinco_prs <-  rowMeans(data_wid1[c("par0111s", "par0112s")], na.rm =
      TRUE)
```

```

```{r Parental Behavior and Involvement 2}
## Parenting Style, child report (children aged 5 to 9, F2F1 only).
## child on mother
## child on mother: parenting scale warmth (age 5-9, mean)'
## computing mean for every row
      data_wid1$paswarm_2m  <-  rowMeans(data_wid1[c("pas0200m", "pas0201m", "pas0202m",
      "pas0203m")], na.rm = TRUE)
## child on mother: parenting scale psych. control (age 5-9, mean)'
## computing mean for every row
      data_wid1$pascont_2m  <-  rowMeans(data_wid1[c("pas0204m", "pas0205m", "pas0206m")],
      na.rm = TRUE)
## child on mother: parenting scale negative communication (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasnegc_2m  <-  rowMeans(data_wid1[c("pas0207m", "pas0208m")], na.rm =
      TRUE)
## child on mother: parenting scale monitoring (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasmoni_2m  <-  rowMeans(data_wid1[c("pas0209m", "pas0210m")], na.rm =
      TRUE)
## child on mother: parenting scale inconsistent parenting (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasinco_2m  <-  rowMeans(data_wid1[c("pas0211m", "pas0212m")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 5 to 9, F2F1 only).
## child on father
## child on father: parenting scale warmth (age 5-9, mean)'
## computing mean for every row
      data_wid1$paswarm_2f  <-  rowMeans(data_wid1[c("pas0200f", "pas0201f", "pas0202f",
      "pas0203f")], na.rm = TRUE)
## child on father: parenting scale psych. control (age 5-9, mean)'
## computing mean for every row
      data_wid1$pascont_2f  <-  rowMeans(data_wid1[c("pas0204f", "pas0205f", "pas0206f")],
      na.rm = TRUE)
## child on father: parenting scale negative communication (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasnegc_2f  <-  rowMeans(data_wid1[c("pas0207f", "pas0208f")], na.rm =
      TRUE)
## child on father: parenting scale monitoring (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasmoni_2f  <-  rowMeans(data_wid1[c("pas0209f", "pas0210f")], na.rm =
      TRUE)
## child on father: parenting scale inconsistent parenting (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasinco_2f  <-  rowMeans(data_wid1[c("pas0211f", "pas0212f")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 5 to 9, F2F1 only).
## child on stepmother
## child on stepmother: parenting scale warmth (age 5-9, mean)'
## computing mean for every row
      data_wid1$paswarm_2n  <-  rowMeans(data_wid1[c("pas0200n", "pas0201n", "pas0202n",
      "pas0203n")], na.rm = TRUE)
## child on stepmother: parenting scale psych. control (age 5-9, mean)'
## computing mean for every row
      data_wid1$pascont_2n  <-  rowMeans(data_wid1[c("pas0204n", "pas0205n", "pas0206n")],
      na.rm = TRUE)
## child on stepmother: parenting scale negative communication (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasnegc_2n  <-  rowMeans(data_wid1[c("pas0207n", "pas0208n")], na.rm =
      TRUE)
## child on stepmother: parenting scale monitoring (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasmoni_2n  <-  rowMeans(data_wid1[c("pas0209n", "pas0210n")], na.rm =
      TRUE)
```
```

```
## child on stepmother: parenting scale inconsistent parenting (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasinco_2n  <-  rowMeans(data_wid1[c("pas0211n", "pas0212n")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 5 to 9, F2F1 only).
## child on stepfather
## child on stepfather: parenting scale warmth (age 5-9, mean)'
## computing mean for every row
      data_wid1$paswarm_2g  <-  rowMeans(data_wid1[c("pas0200g", "pas0201g", "pas0202g",
      "pas0203g")], na.rm = TRUE)
## child on stepfather: parenting scale psych. control (age 5-9, mean)'
## computing mean for every row
      data_wid1$pascont_2g  <-  rowMeans(data_wid1[c("pas0204g", "pas0205g", "pas0206g")],
      na.rm = TRUE)
## child on stepfather: parenting scale negative communication (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasnegc_2g  <-  rowMeans(data_wid1[c("pas0207g", "pas0208g")], na.rm =
      TRUE)
## child on stepfather: parenting scale monitoring (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasmoni_2g  <-  rowMeans(data_wid1[c("pas0209g", "pas0210g")], na.rm =
      TRUE)
## child on stepfather: parenting scale inconsistent parenting (age 5-9, mean)'
## computing mean for every row
      data_wid1$pasinco_2g  <-  rowMeans(data_wid1[c("pas0211g", "pas0212g")], na.rm =
      TRUE)
```
```{r Parental Behavior and Involvement 3}
## Parenting Style, child report (children aged 10 or older, F2F1 and F2F2).
## child on mother
## child on mother: parenting scale warmth (age >=10, mean)
## computing mean for every row
      data_wid1$paswarm_1m  <-  rowMeans(data_wid1[c("pas0100m", "pas0101m", "pas0102m",
      "pas0103m")], na.rm = TRUE)
## child on mother: parenting scale psych. control (age >=10, mean)
## computing mean for every row
      data_wid1$pascont_1m  <-  rowMeans(data_wid1[c("pas0104m", "pas0105m", "pas0106m")],
      na.rm = TRUE)
## child on mother: parenting scale negative communication (age >=10, mean)
## computing mean for every row
      data_wid1$pasnegc_1m  <-  rowMeans(data_wid1[c("pas0107m", "pas0108m")], na.rm =
      TRUE)
## child on mother: parenting scale monitoring (age >=10, mean)
## computing mean for every row
      data_wid1$pasmoni_1m  <-  rowMeans(data_wid1[c("pas0109m", "pas0110m")], na.rm =
      TRUE)
## child on mother: parenting scale inconsistent parenting (age >=10, mean)
## computing mean for every row
      data_wid1$pasinco_1m  <-  rowMeans(data_wid1[c("pas0111m", "pas0112m")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 10 or older, F2F1 and F2F2).
## child on father
## child on father: parenting scale warmth (age >=10, mean)
## computing mean for every row
      data_wid1$paswarm_1f  <-  rowMeans(data_wid1[c("pas0100f", "pas0101f", "pas0102f",
      "pas0103f")], na.rm = TRUE)
## child on father: parenting scale psych. control (age >=10, mean)
## computing mean for every row
      data_wid1$pascont_1f  <-  rowMeans(data_wid1[c("pas0104f", "pas0105f", "pas0106f")],
      na.rm = TRUE)
## child on father: parenting scale negative communication (age >=10, mean)
## computing mean for every row
      data_wid1$pasnegc_1f  <-  rowMeans(data_wid1[c("pas0107f", "pas0108f")], na.rm =
      TRUE)
## child on father: parenting scale monitoring (age >=10, mean)
```

```
## computing mean for every row
      data_wid1$pasmoni_1f  <-  rowMeans(data_wid1[c("pas0109f", "pas0110f")], na.rm =
      TRUE)
## child on father: parenting scale inconsistent parenting (age >=10, mean)
## computing mean for every row
      data_wid1$pasinco_1f  <-  rowMeans(data_wid1[c("pas0111f", "pas0112f")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 10 or older, F2F1 and F2F2).
## child on stepmother
## child on stepmother: parenting scale warmth (age >=10, mean)
## computing mean for every row
      data_wid1$paswarm_1n  <-  rowMeans(data_wid1[c("pas0100n", "pas0101n", "pas0102n",
      "pas0103n")], na.rm = TRUE)
## child on stepmother: parenting scale psych. control (age >=10, mean)
## computing mean for every row
      data_wid1$pascont_1n  <-  rowMeans(data_wid1[c("pas0104n", "pas0105n", "pas0106n")],
      na.rm = TRUE)
## child on stepmother: parenting scale negative communication (age >=10, mean)
## computing mean for every row
      data_wid1$pasnegc_1n  <-  rowMeans(data_wid1[c("pas0107n", "pas0108n")], na.rm =
      TRUE)
## child on stepmother: parenting scale monitoring (age >=10, mean)
## computing mean for every row
      data_wid1$pasmoni_1n  <-  rowMeans(data_wid1[c("pas0109n", "pas0110n")], na.rm =
      TRUE)
## child on stepmother: parenting scale inconsistent parenting (age >=10, mean)
## computing mean for every row
      data_wid1$pasinco_1n  <-  rowMeans(data_wid1[c("pas0111n", "pas0112n")], na.rm =
      TRUE)

## Parenting Style, child report (children aged 10 or older, F2F1 and F2F2).
## child on stepfather:
## child on stepfather: parenting scale warmth (age >=10, mean)
## computing mean for every row
      data_wid1$paswarm_1g  <-  rowMeans(data_wid1[c("pas0100g", "pas0101g", "pas0102g",
      "pas0103g")], na.rm = TRUE)
## child on stepfather: parenting scale psych. control (age >=10, mean)
## computing mean for every row
      data_wid1$pascont_1g  <-  rowMeans(data_wid1[c("pas0104g", "pas0105g", "pas0106g")],
      na.rm = TRUE)
## child on stepfather: parenting scale negative communication (age >=10, mean)
## computing mean for every row
      data_wid1$pasnegc_1g  <-  rowMeans(data_wid1[c("pas0107g", "pas0108g")], na.rm =
      TRUE)
## child on stepfather: parenting scale monitoring (age >=10, mean)
## computing mean for every row
      data_wid1$pasmoni_1g  <-  rowMeans(data_wid1[c("pas0109g", "pas0110g")], na.rm =
      TRUE)
## child on stepfather: parenting scale inconsistent parenting (age >=10, mean)
## computing mean for every row
      data_wid1$pasinco_1g  <-  rowMeans(data_wid1[c("pas0111g", "pas0112g")], na.rm =
      TRUE)
```


Sibling Relationship Quality
```{r Sibling Relationship Quality 1}
## SRI- Version 1 – Early childhood
## sibling relationship quality, self-report (aged 5 to 9, F2F1 only)
## twin on co-twin
## twin on co-twin: scale sibling relationship affection (age 5-9, mean)
## computing mean for every row
      data_wid1$sreaff_1  <-  rowMeans(data_wid1[c("sre0500", "sre0501", "sre0502",
      "sre0503")], na.rm = TRUE)
## twin on co-twin: scale sibling relationship hostility (age 5-9, mean
## computing mean for every row
```

```
      data_wid1$srehos_1  <-  rowMeans(data_wid1[c("sre0504", "sre0505", "sre0506",
      "sre0507")], na.rm = TRUE)
## twin on co-twin: scale sibling relationship rivalry (age 5-9, mean)
## computing mean for every row
      data_wid1$sreriv_1  <-  rowMeans(data_wid1[c("sre0508", "sre0509", "sre0510",
      "sre0511")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 5 to 9, F2F1 only)
## twin on sibling
## twin on sibling: scale sibling relationship affection (age 5-9, mean)
## computing mean for every row
      data_wid1$sreaff_1s  <-  rowMeans(data_wid1[c("sre0500s", "sre0501s", "sre0502s",
      "sre0503s")], na.rm = TRUE)
## twin on sibling: scale sibling relationship hostility (age 5-9, mean
## computing mean for every row
      data_wid1$srehos_1s  <-  rowMeans(data_wid1[c("sre0504s", "sre0505s", "sre0506s",
      "sre0507s")], na.rm = TRUE)
## twin on sibling: scale sibling relationship rivalry (age 5-9, mean)
## computing mean for every row
      data_wid1$sreriv_1s  <-  rowMeans(data_wid1[c("sre0508s", "sre0509s", "sre0510s",
      "sre0511s")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 5 to 9, F2F1 only)
## sibling on twin1
## sibling on twin1: scale sibling relationship affection (age 5-9, mean)
## computing mean for every row
      data_wid1$sreaff_1t  <-  rowMeans(data_wid1[c("sre0500t", "sre0501t", "sre0502t",
      "sre0503t")], na.rm = TRUE)
## sibling on twin1: scale sibling relationship hostility (age 5-9, mean
## computing mean for every row
      data_wid1$srehos_1t  <-  rowMeans(data_wid1[c("sre0504t", "sre0505t", "sre0506t",
      "sre0507t")], na.rm = TRUE)
## sibling on twin1: scale sibling relationship rivalry (age 5-9, mean)
## computing mean for every row
      data_wid1$sreriv_1t  <-  rowMeans(data_wid1[c("sre0508t", "sre0509t", "sre0510t",
      "sre0511t")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 5 to 9, F2F1 only)
## sibling on twin2
## sibling on twin2: scale sibling relationship affection (age 5-9, mean)
## computing mean for every row
      data_wid1$sreaff_1u  <-  rowMeans(data_wid1[c("sre0500u", "sre0501u", "sre0502u",
      "sre0503u")], na.rm = TRUE)
## sibling on twin2: scale sibling relationship hostility (age 5-9, mean
## computing mean for every row
      data_wid1$srehos_1u  <-  rowMeans(data_wid1[c("sre0504u", "sre0505u", "sre0506u",
      "sre0507u")], na.rm = TRUE)
## sibling on twin2: scale sibling relationship rivalry (age 5-9, mean)
## computing mean for every row
      data_wid1$sreriv_1u  <-  rowMeans(data_wid1[c("sre0508u", "sre0509u", "sre0510u",
      "sre0511u")], na.rm = TRUE)
```

```{r Sibling Relationship Quality 2}
## SRI - Version 2 – Late childhood
## sibling relationship quality, self-report (aged 10 to 14)
## twin on co-twin
## twin on co-twin: scale sibling relationship affection (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreaff_2  <-  rowMeans(data_wid1[c("sre0100", "sre0101", "sre0102",
      "sre0103")], na.rm = TRUE)
## twin on co-twin: scale sibling relationship hostility (aged 10 to 14, mean
## computing mean for every row
      data_wid1$srehos_2  <-  rowMeans(data_wid1[c("sre0104", "sre0105", "sre0106",
      "sre0107")], na.rm = TRUE)

## twin on co-twin: scale sibling relationship rivalry (aged 10 to 14, mean)
```

```
## computing mean for every row
      data_wid1$sreriv_2  <-  rowMeans(data_wid1[c("sre0108", "sre0109", "sre0110",
      "sre0111")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 10 to 14)
## twin on sibling
## twin on sibling: scale sibling relationship affection (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreaff_2s  <-  rowMeans(data_wid1[c("sre0100s", "sre0101s", "sre0102s",
      "sre0103s")], na.rm = TRUE)
## twin on sibling: scale sibling relationship hostility (aged 10 to 14, mean
## computing mean for every row
      data_wid1$srehos_2s  <-  rowMeans(data_wid1[c("sre0104s", "sre0105s", "sre0106s",
      "sre0107s")], na.rm = TRUE)

## twin on sibling: scale sibling relationship rivalry (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreriv_2s  <-  rowMeans(data_wid1[c("sre0108s", "sre0109s", "sre0110s",
      "sre0111s")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 10 to 14)
## sibling on twin1
## sibling on twin1: scale sibling relationship affection (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreaff_2t  <-  rowMeans(data_wid1[c("sre0100t", "sre0101t", "sre0102t",
      "sre0103t")], na.rm = TRUE)
## sibling on twin1: scale sibling relationship hostility (aged 10 to 14, mean
## computing mean for every row
      data_wid1$srehos_2t  <-  rowMeans(data_wid1[c("sre0104t", "sre0105t", "sre0106t",
      "sre0107t")], na.rm = TRUE)

## sibling on twin1: scale sibling relationship rivalry (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreriv_2t  <-  rowMeans(data_wid1[c("sre0108t", "sre0109t", "sre0110t",
      "sre0111t")], na.rm = TRUE)


## sibling relationship quality, self-report (aged 10 to 14).
## sibling on twin2
## sibling on twin2: scale sibling relationship affection (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreaff_2u  <-  rowMeans(data_wid1[c("sre0100u", "sre0101u", "sre0102u",
      "sre0103u")], na.rm = TRUE)
## sibling on twin2: scale sibling relationship hostility (aged 10 to 14, mean
## computing mean for every row
      data_wid1$srehos_2u  <-  rowMeans(data_wid1[c("sre0104u", "sre0105u", "sre0106u",
      "sre0107u")], na.rm = TRUE)

## sibling on twin2: scale sibling relationship rivalry (aged 10 to 14, mean)
## computing mean for every row
      data_wid1$sreriv_2u  <-  rowMeans(data_wid1[c("sre0108u", "sre0109u", "sre0110u",
      "sre0111u")], na.rm = TRUE)
```

```{r Sibling Relationship Quality 3}
## ASRQ
## sibling relationship quality, self-report (aged 15 or older)
## twin on co-twin
## twin on co-twin: scale sibling relationship warmth (age >=15, mean)
## computing mean for every row
      data_wid1$srewarm  <-  rowMeans(data_wid1[c("sre0200", "sre0300", "sre0302")], na.rm
      = TRUE)
## twin on co-twin: scale sibling relationship conflict (age >=15, mean)
## computing mean for every row
      data_wid1$sreconf  <-  rowMeans(data_wid1[c("sre0201", "sre0202", "sre0301")], na.rm
      = TRUE)
## twin on co-twin: scale sibling relationship rivalry (age >=15, mean)
```

```
## recoding the variables acCording to the manual
      data_wid1$sre0400.r <- recode(data_wid1$sre0400, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0401.r <- recode(data_wid1$sre0401, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0402.r <- recode(data_wid1$sre0402, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0403.r <- recode(data_wid1$sre0403, "1=2; 2=1; 3=0; 4=1; 5=2")
## computing mean for every row
      data_wid1$sreriva  <-  rowMeans(data_wid1[c("sre0400.r", "sre0401.r", "sre0402.r",
      "sre0403.r")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 15 or older)
## sibling on twin1
## sibling on twin1: scale sibling relationship warmth (age >=15, mean)
## computing mean for every row
      data_wid1$srewarm_t  <-  rowMeans(data_wid1[c("sre0200t", "sre0300t", "sre0302t")],
      na.rm = TRUE)
## sibling on twin1: scale sibling relationship conflict (age >=15, mean)
## computing mean for every row
      data_wid1$sreconf_t  <-  rowMeans(data_wid1[c("sre0201t", "sre0202t", "sre0301t")],
      na.rm = TRUE)
## sibling on twin1: scale sibling relationship rivalry (age >=15, mean)
## recoding the variables acCording to the manual
      data_wid1$sre0400t.r <- recode(data_wid1$sre0400t, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0401t.r <- recode(data_wid1$sre0401t, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0402t.r <- recode(data_wid1$sre0402t, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0403t.r <- recode(data_wid1$sre0403t, "1=2; 2=1; 3=0; 4=1; 5=2")
## computing mean for every row
      data_wid1$sreriva_t  <-  rowMeans(data_wid1[c("sre0400t.r", "sre0401t.r",
      "sre0402t.r", "sre0403t.r")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 15 or older)
# sibling on twin2
## sibling on twin2: scale sibling relationship warmth (age >=15, mean)
## computing mean for every row
      data_wid1$srewarm_u  <-  rowMeans(data_wid1[c("sre0200u", "sre0300u", "sre0302u")],
      na.rm = TRUE)
## sibling on twin2: scale sibling relationship conflict (age >=15, mean)
## computing mean for every row
      data_wid1$sreconf_u  <-  rowMeans(data_wid1[c("sre0201u", "sre0202u", "sre0301u")],
      na.rm = TRUE)
## sibling on twin2: scale sibling relationship rivalry (age >=15, mean)
## recoding the variables acCording to the manual
      data_wid1$sre0400u.r <- recode(data_wid1$sre0400u, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0401u.r <- recode(data_wid1$sre0401u, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0402u.r <- recode(data_wid1$sre0402u, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0403u.r <- recode(data_wid1$sre0403u, "1=2; 2=1; 3=0; 4=1; 5=2")
## computing mean for every row
      data_wid1$sreriva_u  <-  rowMeans(data_wid1[c("sre0400u.r", "sre0401u.r",
      "sre0402u.r", "sre0403u.r")], na.rm = TRUE)

## sibling relationship quality, self-report (aged 15 or older)
## twin on sibling
## twin on sibling: scale sibling relationship warmth (age >=15, mean)
## computing mean for every row
      data_wid1$srewarm_s  <-  rowMeans(data_wid1[c("sre0200s", "sre0300s", "sre0302s")],
      na.rm = TRUE)
## twin on sibling: scale sibling relationship conflict (age >=15, mean)
## computing mean for every row
      data_wid1$sreconf_s  <-  rowMeans(data_wid1[c("sre0201s", "sre0202s", "sre0301s")],
      na.rm = TRUE)
## twin on sibling: scale sibling relationship rivalry (age >=15, mean)
## recoding the variables acCording to the manual
      data_wid1$sre0400s.r <- recode(data_wid1$sre0400s, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0401s.r <- recode(data_wid1$sre0401s, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0402s.r <- recode(data_wid1$sre0402s, "1=2; 2=1; 3=0; 4=1; 5=2")
      data_wid1$sre0403s.r <- recode(data_wid1$sre0403s, "1=2; 2=1; 3=0; 4=1; 5=2")
## computing mean for every row
```

```
      data_wid1$sreriva_s  <-  rowMeans(data_wid1[c("sre0400s.r", "sre0401s.r",
      "sre0402s.r", "sre0403s.r")], na.rm = TRUE)
```

Quality of Home Environment
```{r Quality of Home Environment}
## self-report (aged 10 or older, F2F1: parental report and child's report of children who are currently living in the household of the parents; F2F2: only child’s report of children who are currently living in the household of the parents).
## please note: hoe0102 corresponds to hoe0100 and is only assessed for parents, whereas hoe0100 is only assessed for children between 10 and 13 years of age.
## scale quality of home environment: self-report (mean)
## inverted item
      data_wid1$hoe0100.r <- recode(data_wid1$hoe0100, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid1$hoe0102.r <- recode(data_wid1$hoe0102, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid1$hoe0400.r <- recode(data_wid1$hoe0400, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid1$hoe0600.r <- recode(data_wid1$hoe0600, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$hoe1  <-  rowMeans(data_wid1[c("hoe0102.r", "hoe0200", "hoe0300",
      "hoe0400.r", "hoe0500", "hoe0600.r")], na.rm = TRUE)
      data_wid1$hoe2  <-  rowMeans(data_wid1[c("hoe0100.r", "hoe0200", "hoe0300",
      "hoe0400.r", "hoe0500", "hoe0600.r")], na.rm = TRUE)

## scale quality of home environment: self-report (aged 9 or younger, only in F2F2)
## inverted item
      data_wid3$hoe0110.r <- recode(data_wid3$hoe0110, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid3$hoe0410.r <- recode(data_wid3$hoe0410, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid3$hoe0610.r <- recode(data_wid3$hoe0610, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid3$hoechild  <-  rowMeans(data_wid3[c("hoe0110.r", "hoe0210", "hoe0310",
      "hoe0410.r", "hoe0510", "hoe0610.r")], na.rm = TRUE)

## scale quality of home environment: retrospective self-report (children aged 16 or older outside of parental household, F2F1 and F2F2)
## inverted item
      data_wid1$hoe0101.r <- recode(data_wid1$hoe0101, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid1$hoe0401.r <- recode(data_wid1$hoe0401, "1=5; 2=4; 3=3; 4=2; 5=1")
      data_wid1$hoe0601.r <- recode(data_wid1$hoe0601, "1=5; 2=4; 3=3; 4=2; 5=1")
## computing mean for every row
      data_wid1$hoeretro  <-  rowMeans(data_wid1[c("hoe0101.r", "hoe0201", "hoe0301",
      "hoe0401.r", "hoe0501", "hoe0601.r")], na.rm = TRUE)

```

- End of the Script -