TwinLife Technical Report Series

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TwinLife Scales Manual

F2F1, CATI 1, F2F2, & CATI2

v2.0.0

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***TwinLife* Scales Manual: F2F1, CATI 1, F2F2, & CATI2 v2.0.0**

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TwinLife Scales Manual - v2.0.0

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

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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 of the *TwinLife* study (data version 4.0.0).

The *TwinLife* study uses items of well-validated psychological 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 psychological scales used in the *TwinLife* study face to face wave one (for more information on face to face wave one, see Brix et al., 2017), telephone wave one, face to face wave two, and telephone wave two. 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. 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/. For every construct relevant to this report, 1) a short summary of the scale, 2) an overview of the scale's items, and 3) the measurement's source are reported[1]. 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; SPSS syntax for all scales mentioned in the scales manual is provided in Appendix B. The syntax can be applied on the TwinLife data set in person format (for more information, please consult the syntax's introduction notes).

Aim of the German twin family study *TwinLife* is to investigate the development of social inequalities over the life course (Diewald et al., 2016). For this purpose, household (face to face) and telephone (CATI) interviews take place every year at regular rotation interviewing

[1] Please keep in mind that the original survey language was 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 were in English originally and translated into German for *TwinLife*, the item texts here correspond to the original English items. Please note that references not directly related to the measurement's source are reported under "general references".

4,097[2] 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, labor 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).

Change log v2.0.0

Compared to the previous version (Baum et al., 2020), numerous modifications and improvements have been made to facilitate working with the scales manual. In v2.0.0 the following changes have been made:

- Information on the second telephone interview was added
- Inclusion of the scales for *cultural capital*, *life goals*, and *bullying*
- For each scale, SPSS-syntax is now provided in Appendix B
- Revision of the scale construction for the *quality of home environment* scales (simplified presentation and correction of scale forming for children aged 5 to 9)
- Corrections of inconsistencies in items lists and variable names for *mathematical self-concept*, *self-perceived ability*, *externalizing,* and *locus of control* (mostly typing errors)
- Minor corrections of the stated response format, for *personality* - parental report (range of values is 0 - 10 instead of 1 - 10) and academic self-concept (missings are no longer coded as 5 and 6 in the current data set)
- Corrections and further specification of item sources
- Minor discrepancies in item wording (in comparison to other *TwinLife* documentations) were resolved
- Minor changes concerning filter wording
- Correction of typing errors

[2] This number refers to the sample of the first face to face interview wave.

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

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

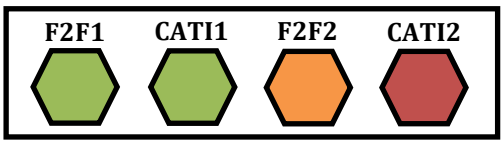
} components of the face to face interviews

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

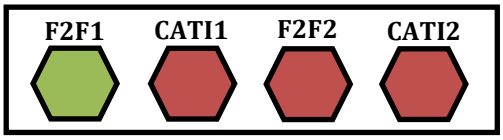
Traffic Light System

For a better orientation, a traffic light system is used to indicate whether or not a construct was assessed in face to face wave one (F2F1), telephone wave one (CATI1), face to face wave two (F2F2), and telephone wave two (CATI2). The colors used will be introduced in the following:

- Green: The construct was assessed in this data collection
- Orange: 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: 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 second telephone interview, it was not assessed.



Skill Formation and Education

Cognitive Abilities

Summary

In face to face wave one[3], 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 – by biological factors affected – ability to solve problems without having to resort to previous experience (Horn & Cattell, 1966; Schmidt-Atzert & Amelang, 2012). In the *TwinLife* study, the type of assessment differed slightly 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 additional to the aforementioned three; CFT 20-R; Weiß, 2006). For the children, the test battery was applied in a paper-and-pencil version (PAPI) administered by a trained interviewer. The older group completed the test computer-based (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), respectively 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[4]
- Sum score: Sum of right answers given in standard test-time (short), in the additional minute (long), and combined (total)

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

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

Scales and items

CFT 1-R (participants aged 5 to 9)

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)

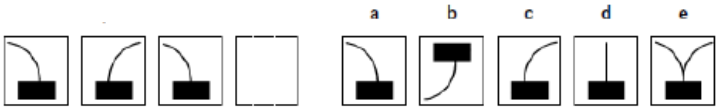
Item example: 

CFT 20-R (participants aged 10 years or older)

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)

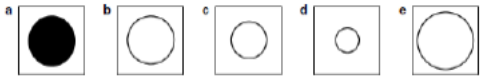
Item example:



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)

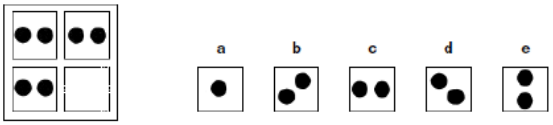
Item example:



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)

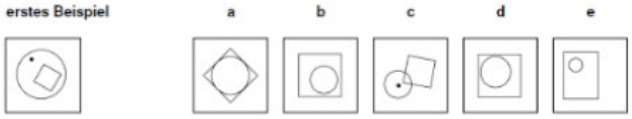
Item example:



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:



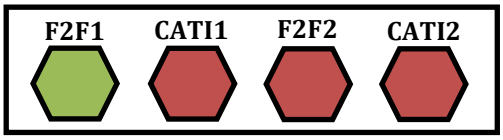
References

CFT 1-R:

Weiß, R. H., & Osterland, J. (2012). *Grundintelligenztest Skala 1 - Revision: CFT 1-R.* Göttingen, Deutschland: Hogrefe.

CFT 20-R:

Weiß, R. H. (2006). *CFT 20-R. Grundintelligenztestskala 2. Manual*. Göttingen, Deutschland: Hogrefe.



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 on the three, respectively four items of the adapted and translated Self-Description Questionnaire for Preschoolers (SDQP; Marsh, Ellis, & Craven, 2002) via CAPI in face to face wave one.

Scales and items

Academic self-concept (participants aged 5 to 7) - 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? (recoding needed)
- asc0101: Do you know lots of letters of the alphabet? (recoding needed)
- asc0102: Do you know lots of different words? (recoding needed)

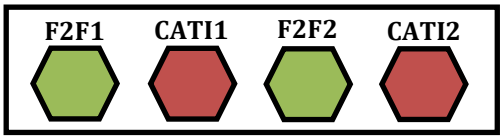
Mathematical self-concept: asc0103(r), asc0104(r), asc0105(r), asc0106(r)

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

References

SDQP:

Marsh, H. W., Ellis, L. A., & Craven, R. G. (2002). How do preschool children feel about themselves? Unraveling measurement and multidimensional self-concept structure. *Developmental Psychology*, *38 (3)*, 376-393.



Self-perceived ability

Summary

Self-perceived ability is defined as "a cognitive representation of one's ability level in an academic achievement situation" (Weidinger, Spinath, & Steinmayr, 2016, p. 117). Self-perceived ability in general was assessed slightly differently depending on the age of the interviewed person. Preschool children were assessed via one item, while all school attendants were assessed via three items in the CAPI module. In the CASI module (face to face wave 1), respectively CAPI module (face to face wave 2), 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 attendants via self-report. The assessment for school attendants was based on the "Skalen zum akademischen Selbstkonzept" (English: Scales on the academic self-concept; SESSKO; Dickhäuser, Schöne, Spinath, & Steinsmeier-Pelster, 2002). Perceived ability concerning one's job was also assessed for participants aged 16 or older via CAPI and was adapted from the Intrinsic Motivation Inventory (IMI; Deci & Ryan, n.d.).

Scales and items

Self-perceived ability – in general – SESSKO

Self-report (preschool children): 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? (recoding needed)

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

"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 (preschool children): spa0100(t/u/s), spa0202(t/u/s)

"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 (school attendants): spa0300, spa0301, spa0302(i)

"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 (school attendants): spa0400, spa0401, spa0402(i)

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 (participants aged 16 or older): spa0500, spa0501, spa0502, spa0503, spa0504

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

Response format[5]:

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

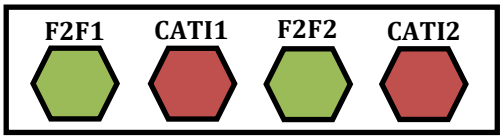
SESSKO:

Dickhäuser, O., Schöne, C., Spinath, B., & Steinsmeier-Pelster, J. (2002). Die Skalen zum akademischen Selbstkonzept. *Zeitschrift Für Differentielle Und Diagnostische Psychologie*, *23(4)*, 393–405. doi: 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

[5] 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" (English: 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 attendants was further assessed for school in general as well as for several specific subjects separately (i.e., math and German) for all school participants aged 5 or older as a self-report. The construct was assessed via CAPI (self-report) and CASI (parental report) in face to face wave one and face to face wave two.

Scales and items

Anticipated intrinsic motivation

Self-report (preschool children): 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? (recoding needed)
- imo0101: Do you think you will like learning at school? (recoding needed)
- imo0102: Are you looking forward to school? (recoding needed)

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

"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 (school attendants): imo0200, imo0201, imo0202

"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 I learn at school.
- imo0201: School is fun.
- imo0202: Things that I learn (at school) are interesting.

Intrinsic motivation – Math – (school attendants): imo0300, imo0301, imo0302

"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 (school attendants): imo0400, imo0401, imo0402

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

Response format:

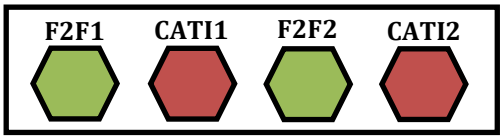
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- 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). *Diagnostica*, *56*(4), 195-211. doi: 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" (English: Scales for the assessment of learning and performance motivation; SELLMO-S; Spinath, Stiensmeier-Pelster, Schöne, & Dickhäuser, 2002) were used to measure learning motivation. For preschool children, anticipated learning motivation was assessed with an adapted version of the SELLMO-S. School attendants rated their actual learning motivation with slightly 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 (preschool children): imo0103(r), imo0104(r), imo0105(r)

"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? (recoding needed)
- imo0104: Are you looking forward to understanding difficult things? (recoding needed)
- imo0105: Are you looking forward to learning as much as possible? (recoding needed)

Learning motivation (school attendants): imo0500, imo0501, imo0502

"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

Participants aged 9 or younger:

- imo0500: ... learning something interesting.
- imo0501: ... understanding difficult things.
- imo0502: ... learning as much as possible.

Participants aged 10 or older:

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

Job learning motivation (participants aged 16 or older): 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 …"

Response format:

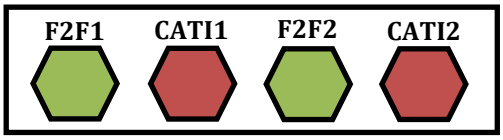
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- 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.* Göttingen, Deutschland: 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 slightly 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. It was further assessed as a parental report for all school attendants. 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 (participants aged 7 to 15): imo0701

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

Response format:

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 (participants aged 16 or older): imo0700, imo0702

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

Response format:

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 (school attendants): imo0701(t/u/s)

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

Response format:

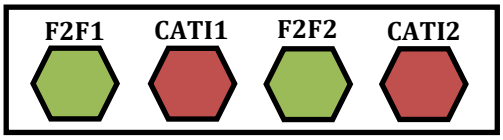
1	2	3	4	5
Does not apply at all	Does not apply	Nor	Does apply	Does apply exactly

- imo0701(t/u/s): Good grades are important for <name of child>.

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 in the PAPI module for participants aged 10 years or older. In the *TwinLife* study, three items from the "Allgemeine Selbstwirksamkeit Kurzskala" (English: General self-efficacy short scale; ASKU; Beierlein, Kovaleva, Kemper, & Rammstedt, 2012) were used to measure this construct.

Scales and items

Self-efficacy (participants aged 10 or older): sef0100, sef0101, sef0102

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

Response format:

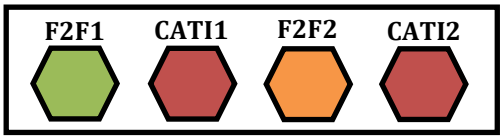
1	2	3	4	5
Do not agree at all	Do not agree	Nor	Agree	Totally agree

- 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)*. Mannheim, Germany: GESIS. doi: 10.23668/psycharchives.418



Self-Esteem

Summary

According to Rosenberg, Schooler, Schoenbach, and Rosenberg (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[6] (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, this construct was assessed as self-report (participants aged 10 or older) in the PAPI module and as parental report (participants aged 5 to 12) in the CASI module.

Scales and items

Self-report (F2F1: participants aged 13 or older; F2F2: participants aged 10 or older): ses0100(i), ses0101, ses0102

"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.

6

Parental report (participants aged 5 to 12): ses0200(t/u/s), ses0102(t/u/s)

"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

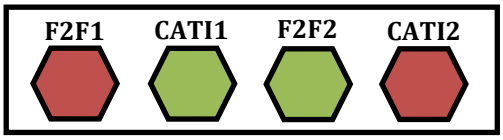
- ses0200(t/u/s): <Name of child> is self-confident.
- ses0102(t/u/s): I believe, all in all, <name of child> is satisfied with him-/herself.

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.



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, Vohs, & Tice, 2007; Muraven & Baumeister, 2000). In the *TwinLife* study, self-regulation was assessed using items of two different questionnaires: Three items of the BISS scale (a German adaption of the Grit Scale (Consistency of Interests); Fleckenstein, Schmidt, & Möller, 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 (participants aged 10 or older)

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

Response format:

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

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 (participants aged 5 to 9)

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

"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.

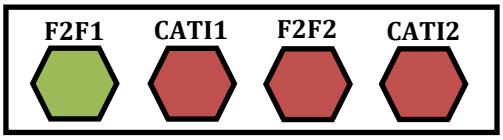
References

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. *Psychologie in Erziehung Und Unterricht*, *61*, 281–286. doi: 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). *Diagnostica*, *55*, 2–10. doi: 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[7], 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 his or her 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" (English: Five factor questionnaire for children – short form; FFFK-K; Weinert et al., 2007).

Scales and items

Self-report - BFI-S (participants aged 10 or older)

"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.)[8]
- per0113: … has an active imagination. (this means I can easily visualize things and like to dream."
- per0115: … is eager for knowledge. (this means I am curious and interested in learning and new experiences.).

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

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

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 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[9]: per0116

- per0116: … likes to have fun and doesn´t worry about tomorrow.

[9] 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 the item is to be included or not depending on the particular research question.

Parental report – FFFK-K (participants aged 5 to 9)

"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)

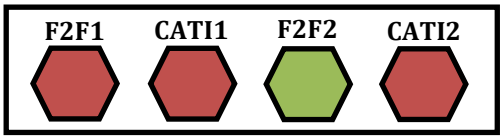
References

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. *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*. Berlin, DE: DIW Berlin. https://www.econstor.eu/bitstream/10419/129229/1/diw_datadoc_2007-020.pdf



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 Heterogenities to Inequalities – Interactions Between Capabilities in Work and Private Life" (Abendroth, Melzer, Jacobebbinghaus, & Schlechter, 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 2 (via CAPI).

Scales and items

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

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

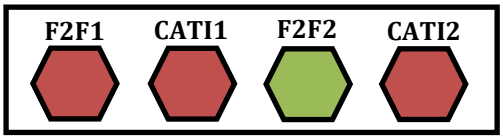
Response format:

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"* (S. Liebig & J. Vompras, Eds.). Bielefeld, Germany: DFG Research Center (SFB) 882 From Heterogenities to Inequalities. https://pub.uni-bielefeld.de/download/2700763/2700861/SFB_882_TechnicalReport_06_B3_v2.pdf



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 wave 2 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 for the NEPS study (for more information regarding particular subscales, see Goßmann, 2018).

Scales and items

Self-report (participants aged 10 or older)

Embodied cultural capital: cul0201(r), cul0202(r), cul0203(r), cul0204(r), cul0205(r)[10]

"Do you have ... at home?"

Response format:

1	2
Yes	No
Recoding	
1	0

[10] 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. (recoding needed)
- cul0203: … books of poems. (recoding needed)
- cul0205: … works of art. (recoding needed)

Educational Resources:

- cul0202: … a dictionary. (recoding needed)

Additional Item:

- cul0204: … a library card. (recoding needed)

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

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

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 (participants aged 5 to 9)

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

Additional Items:

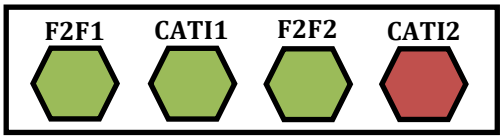
- cul0502(t/u/s): Seen a movie in the cinema.
- cul0505(t/u/s): Attended a rock or pop concert.

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). Bamberg, Germany: Leibniz Institute for Educational Trajectories, National Educational Panel Study. https://www.neps-data.de/Portals/0/Survey%20Papers/SP_XLVIII.pdf



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, Emmons, Larsen, & Griffin, 1985) as well as an adapted version for children (SWLS-C; Gadermann, Schonert-Reichl, & Zumbo, 2010). The construct was assessed for every participant aged 10 or older. Global life satisfaction was assessed in face to face wave one (via CASI), the first telephone interview (via CATI), and face to face wave two (via PAPI).

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 (participants between 10 and 15 years of age): gls0600, gls0700, gls0800, gls0900, gls1000

- 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 (participants aged 16 or older): gls0100, gls0200, gls0300, gls0400, gls0500

- 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.

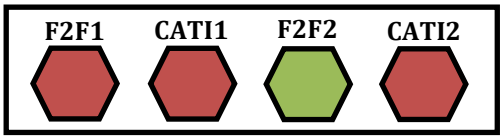
References

SWLS:

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71–75. doi: 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. doi: 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, Hoyer, Klotsche, & Herzberg, 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 (participants aged 10 or older) - LOT-R: lot0100, lot0101, lot0102

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

Response format:

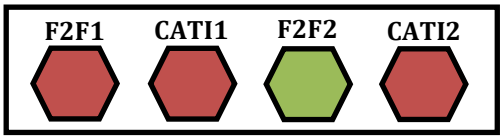
1	2	3	4	5
Does not apply at all	Does not really apply	Partly applies/partly does not apply	Slightly applies	Completely applies

- 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. *Zeitschrift Für Gesundheitspsychologie*, *16*(1), 26–31. doi: 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" (English: 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.

Scales and items

Self-report (participants aged 16 or older and having a child) - EBI: ebi0100, ebi0101, ebi0102, ebi0103, ebi0104, ebi0105

"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:

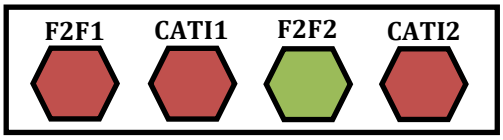
1	2	3	4	5
Does not apply at all	Mostly does not apply	Not sure	Mostly applies	Totally applies

- 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*. Göttingen, Germany: 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" (English: Stress processing questionnaire according to Janke and Erdman adapted for children and adolescents; SVK-KJ; Hampel, Petermann, & Dickow, 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 (participants aged 5 to 15; F2F2 only) – SVF-KJ

"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 (participants aged 16 or older; F2F2 only) – CISS

"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.

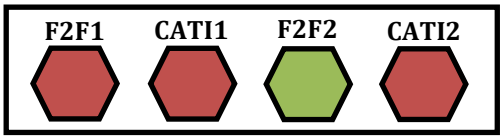
References

SVF-KJ:

Hampel, P., Petermann, F., & Dickow, B. (1997). *Stressverarbeitungsbogen von Janke und Erdmann angepasst für Kinder und Jugendliche (SVF-KJ)*. Göttingen, Germany: Hogrefe.

CISS:

Endler, N. S., & Parker, J. D. A. (1999). *Coping Inventory for Stressful Situations (CISS): Manual*. Toronto, Canada: 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 (school participants aged 5 to 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 (participants aged 16 or older)

"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

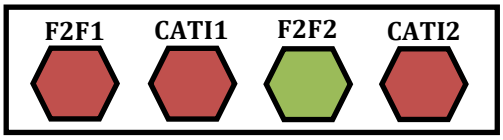
- loc0201: I frequently have the experience that other people have a controlling influence over my life.
- loc0203: The opportunities that I have in life are determined by the social conditions.

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.



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, as this is a supplementary question, it is not intended for inclusion in the scale and provides additional information on the assessment of life goals. This construct was assessed for participants aged 16 or older in the PAPI module in face to face wave two.

Scales and items

Self-report (participants aged 16 or older)

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

Response format:

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

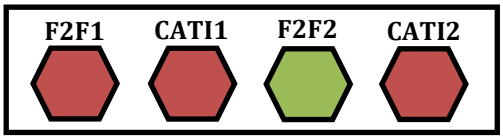
- lgd0103: Having a happy marriage / relationship.
- lgd0104: Having children.

References

Life goals:

Bielenski, H. & Strümpel, B. (1988). *Eingeschränkte Erwerbsarbeit bei Frauen und Männern. Fakten - Wünsche - Realisierungschancen.* Berlin: 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, Aron, & Jagiellowicz, 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 (participants aged between 10 and 15) – HSC

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

Response format:

1	2	3	4	5	6	7
Does not apply at all	-	-	-	-	-	Completely applies

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 (participants aged 16 or older) – HSP-SF[11]

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

Response format:

1	2	3	4	5	6	7
Does not apply at all	-	-	-	-	-	Completely applies

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.

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

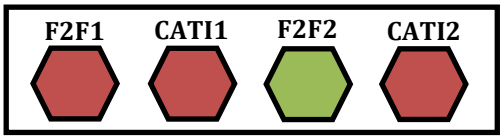
References

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. doi: doi/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



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, Wolfe, Tollit, Butler, & Patton, 2007) was used to assess bullying experiences in a translated and adapted form[12] for participants aged 10 or older. The GBS was assessed in the CASI module in face to face wave two. Participants who did not go to school anymore had to rate their bullying experiences retrospectively. For participants between 5 and 9 years of age, parts of the Bullying- und Viktimisierungs-Fragebogen für Kinder (English: 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").[13]

Scales and items:

Self-report (participants aged 10 or older) - GBS

[Participants still going to school] "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?"

[Participants out of school] "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?"

[12] 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).

[13] 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).

Frequency: bul0100, bul0200, bul0300, bul0400

Response format:

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

Teasing:

- bul0100: How often has anyone teased you or called you names recently / during your school days?

Rumors:

- bul0200: How often has anyone spread rumors about you recently / during your school days (This includes rumors on the internet)?

Deliberate exclusion/social isolation:

- bul0300: How often have you been deliberately left out of things recently / during your school days?

Physical threats/violence:

- bul0400: How often have you been threatened physically or actually hurt by another student recently / during your school days?

Burden: bul0101, bul0201, bul0301, bul0401

Response format:

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

Teasing:

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

Rumors:

- bul0201: How upsetting were the rumors?

Deliberate exclusion/social isolation:

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

Physical threats/violence:

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

Self-report (participants between 5 and 9 years of age) - BVF-K

„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?

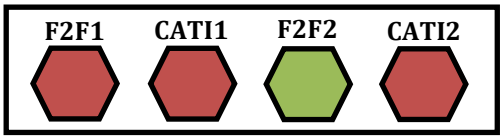
References

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. doi: 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, *Praxis der Kinderpsychologie und Kinderpsychiatrie, 58*(2), 96-109. doi: 10.13109/prkk.2009.58.2.96



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, Helmchen, Kockott, & Mombour, 2013). In *TwinLife*, the items for depression were inspired by the German adaption of Becks Depression Inventory – Fast Screen (BDI-FS; Beck, Steer, & Brown, 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.

Scales and items

Self-report (participants aged 10 or older) – 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:

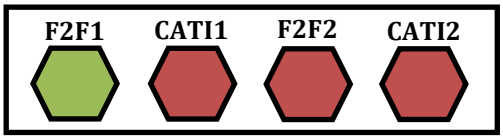
1	2	3	4
Never	-	-	Almost always

- 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*. San Antonio, TX: 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, Meltzer, & Bailey, 1998). It was assessed in face to face wave one[14] 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.

Scales and items[15]

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 (participants aged 10 or older): int0100, int0101, int0102, int0103, int0104

- int0100: I get a lot of headaches, stomach- aches or sickness.
- int0101: I worry a lot.
- int0102: I am often unhappy, down-hearted or tearful.
- int0103: I am nervous in new situations. I easily lose confidence.

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

[15] Please note: The values of the response categories are shifted by one compared to the original scale (0 -2).

- int0104: I have many fears; I am easily scared.

Problems with Peers (participants aged 10 to 17): int0105, int0106(i), int0107(i), int0108, int0109

- 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 (participants aged 18 or older): int0105, int0106(i), int0107(i), int0110, int0111

- 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. [16]
- int0111: Other people pick on me or bully me.

Parental Report (participants aged 5 to 9)

"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

[16] Additional item added in *TwinLife*.

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, down-hearted 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.

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. doi: 10.1007/s007870050057

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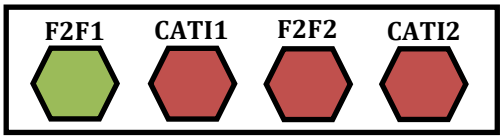

Externalizing Problem Behavior

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[17] 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.

Scales and items[18]

Self-report (participants aged 10 or older)

"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.
- 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)

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

[18] Please note: The values of the response categories are shifted by one compared to the original scale (0-2).

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 (participants aged 5 to 9)[19]

"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)

[19] Caution: Parental variable names do not correspond with the self-report's variable names.

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.

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. doi: 10.1007/s007870050057

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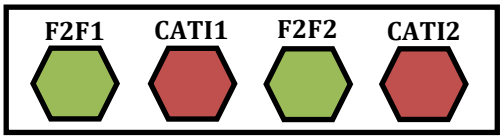

Deviant and Delinquent Behavior

Deviance

Summary

Additional 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.

Scales and items

Self-report (participants aged 5 to 9)

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. doi: 10.1007/s007870050057

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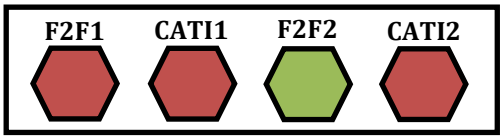


Environment

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, McCabe, Michelli, & Pickeral, 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.

Scales and items

Self-report (participants aged 13 or older)

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

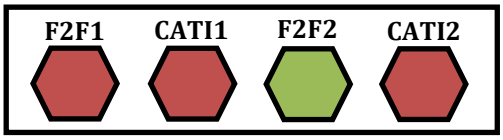
- edu0800: Most of my teachers treat me fairly.
- edu0801: If I need extra help, I will receive it from my teachers.
- edu0802: Most of my teachers really listen to what I have to say.

References

School context:

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

Hertel, S., Hochweber, J., Mildner, D., Steinert, B., & Jude, N. (2014). *PISA 2009 Skalenhandbuch.* Münster; New York: Waxmann https://www.pedocs.de/volltexte/2014/9554/pdf/Hertel_et_al_2014_PISA_2009_Skalenhandbuch.pdf



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, Roßbach, & von Maurice, 2011). It was assessed for school attending participants aged 13 or older in face to face wave two via CAPI.

Scales and items

Self-report (participants aged 13 or older): 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."

Response format:

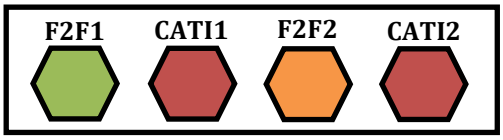
1	2	3	4
Completely disagree	Tend to disagree	Tend to agree	Completely agree

- 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, Bachman, & Votruba-Drzal, 2010). In *Twinlife*, the scales for parental involvement were inspired by the KoSMos 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 participants aged 9 or older; F2F2: participants aged 10 to 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

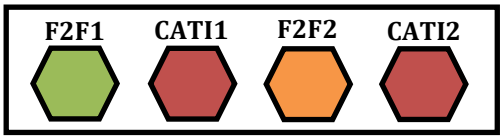
- inv0109: When I get a poor grade, my parents complain and demand that I work harder.
- inv0110: When I get a poor grade my parents threaten me with punishment (like no TV) if I do not promise to work hard in the future to improve my grades.
- inv0111: When I get a poor grade, my parents accuse me of 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). Münster, Germany: 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.* doi: 10.1375/183242706779462903



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) and face to face wave two (via CASI for participants aged 10 to 15). 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 parent's version.

Scales and items

Self-report of parents (F2F1 only)

"How often do the following things typically happen between you and [name of child]?/ Please remind yourself the time when you lived together or the time up to the 18 year of [child's name] life."

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. [20]

[20] Additional item in *TwinLife*.

Psychological Control: par0104(t/u/s), par0105(t/u/s), par0106(t/u/s)[21]

- 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>.

[21] 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 (participants aged 5 to 9; F2F1 only)

"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. [19]

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. [22]
- 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. [21]

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.

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

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

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. [21]
- pas0210(m/f/n/g): When you make new friends, your mother/your father gets to know them soon thereafter. [21]

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. [21]
- pas0212(m/f/n/g): Your mother/your father finds it hard to set and keep consistent rules for you.[21]

Report of children on parents (F2F1: participants aged 10 or older, F2F2: participants aged 10 to 15) – same item wording but different answer format

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)

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

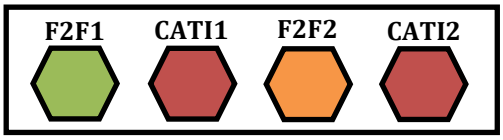
Negative Communication: pas0107(m/f/n/g), pas0108(m/f/n/g)

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

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

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, Westenberg, McHale, Updegraff, & Stocker, 1997). The Adult Sibling Relationship Questionnaire (ASRQ; Stocker, Lanthier, & Furman, 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.

Scales and items

SRI (participants aged 5 to 9; F2F1 only)

"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 kind 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 (participants aged 10 to 14)

"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 (participants aged 15 or older)

"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)

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)

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)

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

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 to her/him.	… that our mother/father is generally closer to 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? (recoding needed)
- sre0403(t/u/s): Does <name of sibling> think your father is closer to him/her or to you? (recoding needed)

References

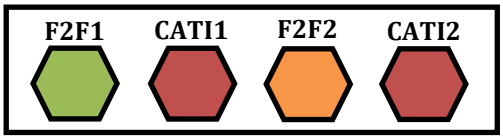
SRI:

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*, 851–859. doi: 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. doi: 10.1177/0192513X02250098

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



Quality of Home Environment

Summary

The quality of home environment was assessed as chaos, which "occurs when a home environment is characterized by a lack of predictability, routine, organization, and stability" (Tucker, Sharp, Van Gundy, & Rebellon, 2018, p. 3701). It was measured with an adapted version of the Chaos, Hubbub and Order Scale (CHAOS; Matheny Jr., Wachs, Ludwig, & Phillips, 1995). 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 two, participants aged 5 to 10 answered the CHAOS scale via CAPI. 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. 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

Self-report (aged 10 or older, F2F1: parental report and child's report of living in the parent's household; F2F2: participants aged 10 to 13) - Chaos: hoe0100 (i; children aged 10 to 13), hoe0102 (i; parent[23]), 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

[23] 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)[24]
- hoe0102: The children have a regular bedtime routine. (i)[22]
- 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.[22]
- hoe0600: The atmosphere in our house is calm. (i)

Child report – CHAOS (children aged 5 to 9; F2F2 only): 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)

[24] hoe0100/2 were altered in wording for the needs of *TwinLife*, hoe0500 represents an additional item.

Retrospective self-report (children aged 16 or older outside of parental household, F2F1 and F2F2): 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:

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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. In general, variable names consist of a) a variable stem indicating which construct was assessed; b) a number indicating the itemblock; 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 itemblock) - **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 itemblock)

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 v4-0-0*

*Contains syntax for all scales included in the TwinLife Scales Manual.

*Literature:
TwinLife Scales Manual. F2F1, CATI1, F2F2 & CATI2, v2.0.0
Baum, M. A., Klatzka, C. H., Nikstat, A., Iser, J., & Hahn, E. (2020). 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

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*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.
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*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 attendants).
      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
      attendants (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
      attendants (mean)'
      spa_pru 'Scale general self-perceived ability twin2: parental report of school
      attendants (mean)'
      spa_prs 'Scale general self-perceived ability sibling: parental report of school
      attendants (mean)'.
      exe.
      *Self-perceived ability math, self-report (school attendants).
      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
      attendants (mean)'.
      exe.
      *Self-perceived ability German, self-report (school attendants).
      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
      attendants (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.
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```
*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 attendants).
      compute imogen= mean.2(imo0200, imo0201, imo0202).
      variable labels imogen 'Scale general intrinsic motivation: self-report of school
      attendants (mean)'.
      exe.
      *Intrinsic motivation math, self-report (school attendants).
      compute imomath= mean.2(imo0300, imo0301, imo0302).
      variable labels imomath 'Scale intrinsic motivation math: self-report of school
      attendants (mean)'.
      exe.
      *Intrinsic motivation German, self-report (school attendants).
      compute imoger= mean.2(imo0400, imo0401, imo0402).
      variable labels imoger 'Scale intrinsic motivation German: self-report of school
      attendants (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 attendants).
      compute imolearn= mean.2(imo0500, imo0501, imo0502).
      variable labels imolearn 'Scale general intrinsic motivation: self-report of school
      attendants (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 attendants), one-item-scale:
      imo0701(t/u/s).
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*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.
```

```
*****************************************************************
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.

*****************************************************************
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.


*********************************************************************
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).
      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 attendants 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 attendants 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 attendants aged 9 or older; F2F2:
      school attendants 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 hoemean = mean.6(hoe0100rec, hoe0102rec, hoe0200, hoe0300, hoe0400rec,
      hoe0500, hoe0600rec).
      variable labels hoemean 'scale quality of home environment: self-report (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.
```