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# British Cohort Study 1970

Derived Variables at 1986 Sweep (16 year follow-up)

Maggie Hancock and Jon Johnson

BCS70 Derived Variables at 1986 Sweep

Second Edition, October 2017



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Please contact the Centre for Longitudinal Studies.  
tel: +44 (0)20 7612 6875  
**email: [clsfeedback@ioe.ac.uk](mailto:clsfeedback@ioe.ac.uk)**

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## Introduction

This User Guide describes the dataset of derived variables for the 1986 sweep of the 1970 British Cohort Study (BCS70). This dataset is deposited under study number 3535 (1970 British Cohort Study: Sixteen-Year Follow-up, 1986) at the UK Data Archive. This is an initial dataset of sweep derived variables.

The derived variables included in the BCS70 1986 sweep derived variables dataset are as follows:

Variable	Variable label	Type of variable
bd4cntry	Country of Interview	Country of interview
bd4regn	Standard Region of residence	Region
bd4gor	Government Office Region of residence	Region
bd4psoc	Social class from fathers occup (or mothers if missing)	Key variable
bd4age	Age of cohort member when sat assessments	Key variable
bd4rread	Raw Vocabulary Test score (cv01 to cv075)	Key variable
bd4read	Standardised Vocabulary Test score (b16read)	Key variable
bd4rdage	Estimated reading age at age 16	Key variable
bd4min	CM's parent gave information on at least 1 Malaise question	Mother malaise
bd4mmal	(CM's parent) total Malaise score	Mother malaise
bd4mmala	(CM's parent) total Malaise score - grouped based on distrib.	Mother malaise
bd4mmalb	(CM's parent) total Malaise score grouped ( age 16)	Mother malaise
bd4mal	(CM) total Malaise score (22 questions)	Malaise
bd4malg	(CM) total Malaise score (22 questions) grouped	Malaise
bd4in	CM's parent gave information on at least 1 Rutter question	Rutter
bd4rutt	(CM's parent) total Rutter behaviour score	Rutter
bd4mrutg	(CM's parent) total Rutter behaviour score - grouped	Rutter
bd4stype	DV: School Type Age 16 (derived from STYPE, B9SC16TP and 1986 School Census)	Type of school

## Country of interview derived variable

The Country of Interview variable bd4cntry is taken from the country where the 1986 interview took place (England, Wales, Scotland or Northern Ireland).

## Region derived variables

The Standard Region of residence variable, bd4regn, and the Government Office Region of residence variable, bd4gor, are the region variables for the residence of the cohort member at the 1986 interview. For details of how these variables are derived, please refer to the document 'BCS70: Revised Region Variables' included in the deposit for study number 3535 (1970 British Cohort Study: Sixteen-Year Follow-up, 1986).

## Derived key variables

The derived key variables bd4psoc, bd4age, bd4rread, bd4read and bd4rdage were originally generated as part of the ESRC Researcher Development Initiative (RDI) project (<http://www.cls.ioe.ac.uk/teachingresources>) The variables have been renamed for consistency with

other derived variables. See Appendix 1 for the details of the derivation and renaming of these variables.

## **Mother malaise score derived variables**

The mother malaise score derived variables bd4min, bd4mmal, bd4mmalb and bd4mmala were originally generated as part of the ESRC Researcher Development Initiative (RDI) project (<http://www.cls.ioe.ac.uk/teachingresources>) The variables have been renamed for consistency with other derived variables. See Appendix 2 for the details of the derivation and renaming of these variables.

## **Malaise score derived variables**

The Malaise score derived variables bd4mal and bd4malg were originally generated as part of the ESRC Researcher Development Initiative (RDI) project (<http://www.cls.ioe.ac.uk/teachingresources>) The variables have been renamed for consistency with other derived variables. See Appendix 3 for the details of the derivation and renaming of these variables.

## **Rutter score derived variables**

The Rutter score derived variables bd4in, bd4rutt and bd4mrutg were originally generated as part of the ESRC Researcher Development Initiative (RDI) project (<http://www.cls.ioe.ac.uk/teachingresources>) The variables have been renamed for consistency with other derived variables. See Appendix 4 for the details of the derivation and renaming of these variables.

## **School type derived variable**

The school type variable shows the type of secondary school the cohort member (CM) attended at age 16. Due to a teachers' strike in 1986, the BCS 1986 schools level data, taken from the head teacher's questionnaire, is only available for 40% of the cohort. The 1986 data has consequently been enhanced using two additional sources of school type data; Schools Census data and Age 42 Sweep recall data. This derived variable consequently covers 86% of the cohort and was added to the existing 1986 dataset of derived variables in October 2017.

## APPENDIX 1: Definition of derived key variables

The derived key variables were derived from variables included in the BCS70 1986 follow-up dataset. The key variables and the variables they were derived from are as follows:

<b>Variable name</b>	<b>RDI Key variables dataset variable name</b>	<b>Variable label</b>	<b>Derived using variables</b>
bd4psoc	b16psoc	Social class from fathers occupation (mothers if missing)	t11.2 + t11.9
bd4age	b16age	1986: Age of cohort member when sat assessments	fdoc_mt + fdoc_yr
bd4rread	b16read	1986: Raw Vocabulary Test score (cv01 to cv075)	cv01 to cv075
bd4read	zb16read	1986: Standardised Vocabulary Test score (b16read)	b16read
bd4rdage	b16readage	1986: Estimated reading age at age 16	zb16read and average age

## APPENDIX 2: Definition of mother malaise score derived variables

The mother malaise score derived variables were derived using the 24-item Malaise Inventory (How you feel) completed by the cohort member's parent (usually the mother) on behalf of the cohort member and included in the BCS70 1986 follow-up dataset. These 24 variables were renamed in the Mother Malaise dataset and are as follows:

Original variable name	RDI Mother Malaise dataset variable name	Variable label
pd1.1	b16mmal01	(CM's mother):Do you often have backache?
pd1.2	b16mmal02	(CM's mother):Do you feel tired most of the time?
pd1.3	b16mmal03	(CM's mother):Do you often feel depressed?
pd1.4	b16mmal04	(CM's mother):Do you often have bad headaches?
pd1.5	b16mmal05	(CM's mother):Do you often get worried about things?
pd1.6	b16mmal06	(CM's mother):Do you usually have great difficulty in falling or staying asleep?
pd1.7	b16mmal07	(CM's mother):Do you usually wake unnecessarily early in the morning?
pd1.8	b16mmal08	(CM's mother):Do you wear yourself out worrying about your health?
pd1.9	b16mmal09	(CM's mother):Do you often get into a violent rage?
pd1.10	b16mmal10	(CM's mother):Do people annoy and irritate you?
pd1.11	b16mmal11	(CM's mother):Have you at times had a twitching of the face, head or shoulders?
pd1.12	b16mmal12	(CM's mother):Do you suddenly become scared for no good reason?
pd1.13	b16mmal13	(CM's mother):Are you scared to be alone when there are not friends near you?
pd1.14	b16mmal14	(CM's mother):Are you easily upset or irritated?
pd1.15	b16mmal15	(CM's mother):Are you frightened of going out alone or of meeting people?
pd1.16	b16mmal16	(CM's mother):Are you constantly keyed up and jittery?
pd1.17	b16mmal17	(CM's mother):Do you suffer from indigestion?
pd1.18	b16mmal18	(CM's mother):Do you suffer from an upset stomach?
pd1.19	b16mmal19	(CM's mother):Is your appetite poor?
pd1.20	b16mmal20	(CM's mother):Does every little thing get on your nerves and wear you out?
pd1.21	b16mmal21	(CM's mother):Does your heart often race like mad?
pd1.22	b16mmal22	(CM's mother):Do you often have bad pain in eyes?
pd1.23	b16mmal23	(CM's mother):Are you troubled with rheumatism or fibrosis?
pd1.24	b16mmal24	(CM's mother):Have you ever had a nervous breakdown?

The mother malaise score derived variables were, for consistency, renamed for the Derived Variable dataset and are as follows:

Variable name	RDI Mother Malaise dataset variable name	Variable label
bd4min	b16min	(CM's mother) information on at least 1 Malaise question
bd4mmal	b16mmal	(CM's mother) total Malaise score
bd4mmalb	b16mmalA	(CM's mother) total Malaise score – grouped based on distribution
bd4mmala	b16mmalB	(CM's mother) total Malaise score – grouped (as for CM at age 16)

**SPSS syntax for constructing mother malaise score derived variables**

```

do if (b16mmal01 >= -2).
count b16mmal1 = b16mmal01 b16mmal02 b16mmal03 b16mmal04 b16mmal05
    b16mmal06 b16mmal07 b16mmal08 b16mmal09 b16mmal10 b16mmal11
    b16mmal12 b16mmal13 b16mmal14 b16mmal15 b16mmal16 b16mmal17
    b16mmal18 b16mmal19 b16mmal20 b16mmal21 b16mmal22 b16mmal23
    b16mmal24 (1) .
count b16mmal2 = b16mmal01 b16mmal02 b16mmal03 b16mmal04 b16mmal05
    b16mmal06 b16mmal07 b16mmal08 b16mmal09 b16mmal10 b16mmal11
    b16mmal12 b16mmal13 b16mmal14 b16mmal15 b16mmal16 b16mmal17
    b16mmal18 b16mmal19 b16mmal20 b16mmal21 b16mmal22 b16mmal23
    b16mmal24 (2).
compute b16mmal2 = b16mmal2 * 2.
compute b16mmal = SUM(b16mmal1,b16mmal2).
end if.
count b16miss = b16mmal01 b16mmal02 b16mmal03 b16mmal04 b16mmal05
    b16mmal06 b16mmal07 b16mmal08 b16mmal09 b16mmal10 b16mmal11
    b16mmal12 b16mmal13 b16mmal14 b16mmal15 b16mmal16 b16mmal17
    b16mmal18 b16mmal19 b16mmal20 b16mmal21 b16mmal22 b16mmal23
    b16mmal24 (-2).
count b16miss2 = b16mmal01 b16mmal02 b16mmal03 b16mmal04 b16mmal05
    b16mmal06 b16mmal07 b16mmal08 b16mmal09 b16mmal10 b16mmal11
    b16mmal12 b16mmal13 b16mmal14 b16mmal15 b16mmal16 b16mmal17
    b16mmal18 b16mmal19 b16mmal20 b16mmal21 b16mmal22 b16mmal23
    b16mmal24 (-1).
compute malmiss =b16mmal + b16miss.
if (b16miss > 0 and b16mmal <= 14 and malmiss >= 15) b16mmal = -1.
if (b16miss2 = 24) b16mmal = -2.
missing value b16mmal (-1,-2).
** Two categorical variables were derived for age 16 data. Version A is based on
    the distribution of the scores and is comparable with categorical variables
    derived at age 5 (1975 and at age 10 (1980). Version B is derived in the
    same way as for cohort members' own malaise score at age 16, where a score
    of 15+ indicates depression.

** Version A
recode b16mmal (0 thru 11 = 1) (12 thru 17 = 2) (18 thru highest = 3)
    (-2, -1 = copy) into b16mmalA.
missing values b16mmalA (-1,-2).
variable labels b16mmalA 'bcs70 age 10: (cm mother) total Malaise score – grouped
    based on distribution'.
value labels b16mmalA '1'0-80th centile - normal behaviour' 2'81st-95th centile –
    moderate behaviour problems' 3'95+ centile - severe behaviour problems'
    -1'incomplete info' -2'not stated any questions'.

** Version B
recode b16mmal (0 thru 14=1) (15 thru highest = 2) (-2,-1=copy) into b16mmalB.
end if.
missing values b16mmalB (-1,-2).
variable labels b16mmalB 'bcs70 age 16: (cm mother) total Malaise score grouped (as
    for cm at age 16)'.
value labels b16mmalB '1'0-14' 2'15+' -1'incomplete info' -2'not stated any
    questions' .

rename variables (b16mmal=bd4mmal).
rename variables (b16mmalB=bd4mmalb).

```



### APPENDIX 3: Definition of malaise score derived variables

The malaise score derived variables were derived using the 24-item self completion Malaise Inventory (How you feel) , included in the BCS70 1986 follow-up dataset. These 24 variables were renamed in the Malaise dataset and are as follows:

Original variable name	RDI Malaise dataset variable name	Variable label
c5o1	b16mal01	Do you often have backache?
c5o2	b16mal02	Do you feel tired most of the time?
c5o3	b16mal03	Do you often feel depressed?
c5o4	b16mal04	Do you often have bad headaches?
c5o5	b16mal05	Do you often get worried about things?
c5o6	b16mal06	Do you usually have great difficulty in falling or staying asleep?
c5o7	b16mal07	Do you usually wake unnecessarily early in the morning?
c5o8	b16mal08	Do you wear yourself out worrying about your health?
c5o9	b16mal09	Do you often get into a violent rage?
c5o10	b16mal10	Do people annoy and irritate you?
c5o11	b16mal11	Have you at times had a twitching of the face, head or shoulders?
c5o12	b16mal12	Do you suddenly become scared for no good reason?
c5o13	b16mal13	Are you scared to be alone when there are not friends near you?
c5o14	b16mal14	Are you easily upset or irritated?
c5o15	b16mal15	Are you frightened of going out alone or of meeting people?
c5o16	b16mal16	Are you constantly keyed up and jittery?
c5o17	b16mal17	Do you suffer from indigestion?
c5o18	b16mal18	Do you suffer from an upset stomach?
c5o19	b16mal19	Is your appetite poor?
c5o20	b16mal20	Does every little thing get on your nerves and wear you out?
c5o21	b16mal21	Does your heart often race like mad?
c5o22	b16mal22	Do you often have bad pain in eyes?

The malaise score derived variables were, for consistency, renamed for the Derived Variable dataset and are as follows:

Variable name	RDI Malaise dataset variable name	Variable label
bd4mal	b16mal	Total Malaise score
bd4malg	b16malg	Total Malaise score - grouped

#### SPSS syntax for constructing summary malaise scores

```
do if (b16mal01 >= -2) .
count b16mal1 = b16mal01 b16mal02 b16mal03 b16mal04 b16mal05 b16mal06
b16mal07 b16mal08 b16mal09 b16mal10 b16mal11 b16mal12 b16mal13
b16mal14 b16mal15 b16mal16 b16mal17 b16mal18 b16mal19 b16mal20
b16mal21 b16mal22 (1) .
count b16mal2 = b16mal01 b16mal02 b16mal03 b16mal04 b16mal05 b16mal06
b16mal07 b16mal08 b16mal09 b16mal10 b16mal11 b16mal12 b16mal13
b16mal14 b16mal15 b16mal16 b16mal17 b16mal18 b16mal19 b16mal20
```

## BCS70 Derived Variables at 1986 sweep

```
b16mal21 b16mal22 (2).
compute b16mal2 = b16mal2 * 2.
compute b16mal = SUM(b16mal1,b16mal2).
count b16miss = b16mal01 b16mal02 b16mal03 b16mal04 b16mal05 b16mal06
b16mal07 b16mal08 b16mal09 b16mal10 b16mal11 b16mal12 b16mal13
b16mal14 b16mal15 b16mal16 b16mal17 b16mal18 b16mal19
b16mal20 b16mal21 b16mal22 (-2).
count b16miss2 = b16mal01 b16mal02 b16mal03 b16mal04 b16mal05
b16mal06 b16mal07 b16mal08 b16mal09 b16mal10 b16mal11 b16mal12
b16mal13 b16mal14 b16mal15 b16mal16 b16mal17 b16mal18 b16mal19
b16mal20 b16mal21 b16mal22 (-1).
compute malmiss =b16mal + b16miss.
**this code is used to include as many individuals as possible but excludes those
with enough missing values to potentially give them a 'high' malaise score.
if (b16miss > 0 and b16mal <= 14 and malmiss >= 15) b16mal = -1.
if (b16miss2 = 22) b16mal = -2.
recode b16mal (0 thru 14=1) (15 thru 44 = 2) (-2,-1=copy) into b16malg.
end if.
missing values b16mal b16malg (-1,-2).
variable labels b16mal 'bcs70 age 16: total Malaise score - 22 questions'.
MalaiseVariables.doc
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variable labels b16malg 'bcs70 age 16: total Malaise score - 22 questions
grouped'.
value labels b16mal -1'incomplete info' -2'not stated any questions'.
value labels b16malg 1'0-14' 2'15+' -1'incomplete info' -2'not stated any
questions' .
rename variables (b16mal=bd4mal).
rename variables (b16malg=bd4malg).
```

## APPENDIX 4: Definition of Rutter score derived variables

The Rutter score derived variables were derived using the 19-item Rutter Behaviour Scale questions, completed by the cohort member's parent and included in the BCS70 1986 follow-up dataset. These 19 variables were renamed in the Rutter dataset and are as follows:

Original variable name	RDI Rutter dataset variable name	Variable label
pa5.1	b16rut01	Very restless, often running about or jumping up and down
pa5.2	b16rut02	Is squirmy or fidgety
pa5.3	b16rut03	Often destroys own or others property
pa5.4	b16rut04	Frequently fights with other children
pa5.5	b16rut05	Not much liked by other children
pa5.6	b16rut06	Often worried, worries about many things
pa5.7	b16rut07	Tends to do things on own - rather solitary
pa5.8	b16rut08	Irritable, is quick to fly off the handle
pa5.9	b16rut09	Often appears miserable, unhappy, tearful or distressed
pa5.10	b16rut10	Sometimes takes things belonging to others
pa5.11	b16rut11	Has twitches, mannerisms or tics of the face or body
pa5.12	b16rut12	Frequently sucks thumb or fingers
pa5.13	b16rut13	Frequently bites nails or fingers
pa5.14	b16rut14	Is often disobedient
pa5.15	b16rut15	Cannot settle to anything for more than a few moments
pa5.16	b16rut16	Tends to be fearful or afraid of new things or new situations
pa5.17	b16rut17	Is fussy or over-particular
pa5.18	b16rut18	Often tells lies
pa5.19	b16rut19	Bullies other children

The Rutter score derived variables were, for consistency, renamed for the Derived Variable dataset and are as follows:

Variable name	RDI Rutter dataset variable name	Variable label
bd4in	b16in	(CM's mother) information for at least one Rutter question
bd4rutt	b16mrutt	(CM's mother) total Rutter behaviour score
bd4mrtg	b16mrttg	(CM's mother) total Rutter behaviour score- grouped

### SPSS syntax used to derive Rutter behaviour score variables

```
compute b16mrutt = sum(b16rut01,b16rut02,b16rut03,b16rut04,b16rut05,
b16rut06,b16rut07,b16rut08,b16rut09,b16rut10,b16rut11,b16rut12,b16rut13,
b16rut14,b16rut15,b16rut16,b16rut17,b16rut18,b16rut19).
count b16miss = b16rut01 b16rut02 b16rut03 b16rut04 b16rut05 b16rut06
b16rut07 b16rut08 b16rut09 b16rut10 b16rut11 b16rut12 b16rut13 b16rut14
b16rut15 b16rut16 b16rut17 b16rut18 b16rut19 (missing).
if (b16miss > 0) b16mrutt = -1.
```

## BCS70 Derived Variables at 1986 sweep

```
if (b16miss = 19) b16mrutt = -2.  
missing values b16mrutt (-1,-2).  
value labels b16mrutt -1'incomplete info' -2'no questions answered'  
variable labels b16mrutt 'bcs70 age 16: total Rutter behaviour score (mother)'.  
freq b16mrutt.  
recode b16mrutt (0 thru 7=1) (8 thru 12=2) (13 thru highest = 3) (-1,-2=copy) into  
b16mruttg.  
missing values b16mruttg (-1,-2).  
value labels b16mruttg 1'0-80th centile - normal behaviour' 2'81st-95th centile -  
moderate behaviour problems' 3'95+ centile - severe behaviour problems'  
-1'incomplete info' -2'not stated any questions' .  
variable labels b16mruttg 'bcs70 age 10: total Rutter behaviour score (mother) -  
grouped'.  
rename variables(b16mrutt=bd4rutt).  
rename variables(b16mruttg=bd4mruttg).
```

## APPENDIX 5: Definition of school type derived variable

The derived variable (*bd4stype*) shows the type of secondary school the cohort member (CM) attended at age 16 using three sources of information: Head Teacher Questionnaire in 1986 (*stype*), retrospective question put to the CM at age 42 sweep (*b9sc16tp*) and the School Census data (1986)<sup>1</sup>.

Source variable name	Variable label	Survey Dataset (Sweep)
<i>stype</i>	School Type	bc70_htq (Age 16 Sweep)
<i>b9sc16tp</i>	Type of school attended when aged 16	bc70_2012_flatfile (Age 42 Sweep)

Following inspection of the distribution of responses across the three sources and the level of agreement between these sources, the following order of precedence was proposed:

- If only one source of information existed, this would obviously be used.
- If there were two or three sources and there was 'disagreement':
  - the Head Teacher response at age 16 was used
  - otherwise the Census data was used
  - otherwise the CM's retrospective response at age 42 was used

The steps taken to deriving the school type variable are provided in the pseudo code below.

### Variable assignment and recoding

*census* (derived from School Census data: (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) (7=7) (8=8) (else=-1))

*head* (derived from *stype*: (1=1) (2=4) (3=2) (4=5) (5=3) (6=6) (7=3) (8=7) (else=-1))

*recall* (derived from *b9sc16tp*: (1=1) (2=2) (3,4=3) (5=4) (6=5) (7=6) (8=7) (else=-1))

*final\_type* (final school type value initialised to -1)

### Order of precedence

- If *head* is not missing, set *final\_type* to *head*  
IF (NOTMISSING(*head*)) THEN *final\_type* = *head*
- If *final\_type* is either missing or 'other' (7) and *census* is not missing, set *final\_type* to *census*  
IF (MISSING(*final\_type*) or *final\_type* = 7) and NOTMISSING(*census*)) THEN *final\_type* = *census*
- If *final\_type* is either missing or 'other' (7) and *recall* is not missing, set *final\_type* to *recall*  
IF (MISSING(*final\_type*) or *final\_type* = 7) and NOTMISSING(*recall*)) THEN *final\_type* = *recall*

### Populate derived variable

*bd4stype*=*final\_type*

<sup>1</sup> School type data extracted from the 1986 School Census is not archived

Centre for Longitudinal Studies  
Institute of Education  
20 Bedford Way  
London WC1H 0AL  
Tel: 020 7612 6860  
Fax: 020 7612 6880  
Email: [clsfeedback@ioe.ac.uk](mailto:clsfeedback@ioe.ac.uk)  
Web: [www.cls.ioe.ac.uk](http://www.cls.ioe.ac.uk)