SLI Study 2011-12: annotation of dataset variables

This red font is used for names and value coding of dataset variables and for additional comments about the data.
Derived variables are described on the last page.

Twin ID…… **Twin name …….....**

Background variables added to the dataset:

Variable name	Meaning	Values
SLIdata	Data flag, showing the presence or absence of data	1=yes, 0=no
silage	Twin age when the SLI tests were completed	Years (decimal)

PRACTICE ITEMS

The practice item responses are retained in the dataset but they are not scored as part of the main test. Any text comments in the last column were not entered in the data and have not been retained.

	Response variable	Subject's judgement		Comments
		1	2	
1p. What is this?	p01	**R**	NQR	
3p. What is he do?	p02	R	**NQR**	
4p. Where the forks are?	p03	R	**NQR**	
5p. Is where the pencil?	p04	R	**NQR**	
6p. Where is his friend?	p05	**R**	NQR	
7p. Who his friend is?	p06	R	**NQR**	
8p. Why aren't they go?	p07	R	**NQR**	
9p. What are she doing?	p08	R	**NQR**	
10p. Why is this here?	p09	**R**	NQR	
11p. What isn't he eat?	p10	R	**NQR**	

Main test items

Each item has a response variable (coded 1=R, 2=NQR) and a score variable (coded 1=correct, 0=incorrect) as shown.
Any text comments from the last column were not entered in the data and have not been retained.

		Judgment			Comments
	Response variable	1	2	Score variable (0/1)	
1. What do you like to do?	t01	**R**	NQR	t01sc	
2. Where do you like to play games?	t02	**R**	NQR	t02sc	
3. What you like to do at parties?	t03	R	**NQR**	t03sc	
4. Where you like to play?	t04	R	**NQR**	t04sc	
5. What you like to eat?	t05	R	**NQR**	t05sc	
6. When do you like to eat chips?	t06	**R**	NQR	t06sc	
7. When are you eating?	t07	**R**	NQR	t07sc	
8. What is she doing?	t08	**R**	NQR	t08sc	
9. Why you doing that?	t09	R	NQR	t09sc	
10. What are you drinking?	t10	**R**	NQR	t10sc	
11. What you like to drink?	t11	R	**NQR**	t11sc	
12. What he drinking?	t12	R	**NQR**	t12sc	
13. What does she like to drink?	t13	**R**	NQR	t13sc	
14. When are you making the beds?	t14	**R**	NQR	t14sc	
15. Where does the dog like to sleep?	t15	**R**	NQR	t15sc	
16. Where you sleeping?	t16	R	**NQR**	t16sc	
17. Where is she sleeping?	t17	**R**	NQR	t17sc	
18. When you like to sleep?	t18	R	**NQR**	t18sc	
19. What he making now?	t19	R	**NQR**	t19sc	
20. What the dog eating?	t20	R	**NQR**	t20sc	

Derived dataset variables

Note that grammatical terms are categorised as either "be" or "do", according to the verb used in the stimulus. All variables are derived from the main test items (1 to 20), not from the practice items.

The following simple score variables were added to the dataset:

Variable name	Meaning	Item scores summed	Values
SLIgramBEt	Grammatical "be" total correct	7, 8, 10, 14, 17	0 to 5
SLIgramDOt	Grammatical "do" total correct	1, 2, 6, 13, 15	0 to 5
SLIungrBEt	Ungrammatical "be" total correct	9, 12, 16, 19, 20	0 to 5
SLIungrDOt	Ungrammatical "do" total correct	3, 4, 5, 11, 18	0 to 5
SLIgramt	Grammatical grand total	1, 2, 6, 7, 8, 10, 13, 14, 15, 17	0 to 10
SLIungrt	Ungrammatical grand total	3, 4, 5, 9, 11, 12, 16, 18, 19, 20	0 to 10
SLIt	Overall grand total	all	0 to 20

These scores were additionally converted into the following proportions:

Variable name	Meaning of proportion	Derivation	Values
SLIgramBEpy	Grammatical "be" hits	SLIgramBEt / 5	0 to 1
SLIgramDOpy	Grammatical "do" hits	SLIgramDOt / 5	0 to 1
SLIungrBEpx	Ungrammatical "be" false alarms	SLIgramt / 10	0 to 1
SLIungrDOpx	Ungrammatical "do" false alarms	(5 - SLIungrBEt) / 5	0 to 1
SLIgrampy	Grammatical hits overall	(5 - SLIungrDOt) / 5	0 to 1
SLIungrpx	Ungrammatical false alarms overall	(10 - SLIungrt) / 10	0 to 1

Derivation of "A" scores

The so-called A-score was derived using formula

0.5+(y-x)(1+y-x)/4y(1-x)

for "be" items, "do" items, and for all items.
In this formula, y is the proportion of grammatical hits and x is the proportion of ungrammatical false alarms, as defined in the table above.
The derivation below is given using SPSS syntax.

```
DO IF (SLIungrBEpx < 1 & SLIgramBEpy > 0).
 COMPUTE SLIBEAsc = 0.5 + ((SLIgramBEpy - SLIungrBEpx) * (1 +
SLIgramBEpy - SLIungrBEpx)
    / (4 * SLIgramBEpy * (1 - SLIungrBEpx))).
ELSE IF (SLIungrBEpx = 1 | SLIgramBEpy = 0).
 COMPUTE SLIBEAsc = 0.5.
END IF.

DO IF (SLIungrDOpx < 1 & SLIgramDOpy > 0).
 COMPUTE SLIDOAsc = 0.5 + ((SLIgramDOpy - SLIungrDOpx) * (1 +
SLIgramDOpy - SLIungrDOpx)
    / (4 * SLIgramDOpy * (1 - SLIungrDOpx))).
ELSE IF (SLIungrDOpx = 1 | SLIgramDOpy = 0).
 COMPUTE SLIDOAsc = 0.5.
END IF.

DO IF (SLIungrpx < 1 & SLIgrampy > 0).
 COMPUTE SLIAsc = 0.5 + ((SLIgrampy - SLIungrpx) * (1 + SLIgrampy -
SLIungrpx)
    / (4 * SLIgrampy * (1 - SLIungrpx))).
ELSE IF (SLIungrpx = 1 | SLIgrampy = 0).
 COMPUTE SLIAsc = 0.5.
END IF.
EXECUTE.
* in case of any negative values, recode to 0.
RECODE SLIBEAsc SLIDOAsc SLIAsc (Lowest thru 0=0).
EXECUTE.
```

Each A-score (SLIBEAsc, SLIDOAsc, SLIAsc) has decimal values between 0 and 1.