LUI-Italian: Guide for Users

Thank you for your interest in the LUI-Italian (Italy), the Italian version of the Language Use Inventory. This guide provides important information about the tool, its clinical application, and its scoring. If you have any questions after reading this information, please contact (Emiddia Longobardi (Faculty of Medicine and Psychology, Sapienza University of Rome, emiddia.longobardi@uniroma1.it), Fiorenzo Laghi (Faculty of Medicine and Psychology, Sapienza University of Rome, fiorenzo.laghi@uniroma1.it) or Antonia Lonigro (European University of Rome, antonia.lonigro@unier.it).

General information

The LUI, a standardized questionnaire for parents, was developed in English and normed on over 3500 children with English as a mother tongue. Now adapted to Italian and several other languages, the LUI is:

- designed to assess how children 18 to 47 months old use language in social contexts
- based on research on the development of language and social cognition
- reliable and valid
- easy to complete and use

Use of the LUI-Italian in clinical practice

In clinical practice, the LUI-Italian can be used to:

- monitor language development, over time or as a consequence of intervention
- gather information to establish intervention objectives
- complement vocabulary and grammatical measures in screening for potential expressive language delays
- identify (with caution!) potential social communication difficulties which are central to the DSM-5 definition of social communication disorders; widespread in children with autism spectrum disorders; and sometimes observed in children with language delays, behavioural problems, or significant hearing loss. *Note*: LUI-Italian has not yet used with these atypical population in Italy but original LUI was proved as valid and reliable tool to use with these populations.

Adaptation of the original LUI to Italian

An article published in the *First Language* (Longobardi. Lonigro, Laghi, & O'Neill, 2017) describes how we adapted the LUI-Italian from the original, drawing on feedback about the instructions and items from English-speaking translators, parents, and speech-language pathologists. This study used a back translation procedure to develop the current Italian version, which was administered to 190 children aged 18-47 months as the first application to an Italian sample. The article shows how the adaptation of the original LUI can usefully contribute to assessing pragmatic abilities in the first four years of life.

Structure and content of the LUI-Italian (Italy)

The LUI-Italian (Italy) is structured just like the original LUI. There are 14 subscales covering the child's: (A) gestures to ask for something; (B) gestures to get others to notice something; (C) types of words; (D) requests for help; (E) interests; (F) words to get others to notice things; (G) questions and comments about things; (H) questions and comments about themselves, and about other people (scored separately and jointly); (I) use of words in the context of play/activities with others; (J) teasing and sense of humour; (K) interest in words and language; (L) interests when talking; (M) adaptations of conversation to other people; and (N) longer sentences and stories.

The total score is derived from 10 subscales: C, D, F to K, M, and N. The two subscales related to children's gestures (A and B) are not included in the total score to maintain a focus on language (and because gestures tend to decrease as children acquire language), but scores on the gesture subscales can still be calculated. The two subscales focused on children's interests (E and L) ask parents for qualitative information, and are not scored.

Instructions for administering the LUI and for parents (frequently asked questions)

How long does it take a parent to complete the LUI-Italian?
It takes parents approximately 25-30 minutes to complete the questionnaire (completion for very young children often takes less time). Many parents in our studies reported that they enjoyed completing the questionnaire and reflecting on their child's knowledge and skills.

Can parents fill the LUI-Italian online?
The LUI-Italian currently exists in only as a printable pdf. It is being made available solely to researchers and professionals (e.g., clinicians, speech-language pathologists). Those who administer the LUI-Italian should provide parents with a print copy and not circulate the pdf electronically via email.

What instructions should I give to parents?
The instructions for the parent are included on the questionnaire. We recommend that you review these before giving the questionnaire to a parent. As the instructions state, we recommend that parents complete the questions on a single day (if necessary, within a maximum of two days).

Can I read the questions to the parent(s) instead of asking them to fill it at home?
Yes, you can administer the questionnaire orally. If you do this, it is important to read the examples (i.e., the examples of what children might say) as well as the questions, since parents find these helpful. If the parent is literate, we advise you to let the parent read the examples silently, so that they can reflect on their child's behaviour rather than focus on recalling all that you've read.

How should I score the LUI-Italian?

All of the instructions for scoring are included on the LUI-Italian Score Sheet, available from the download menu. Since most of the questions comprising the LUI-Italian Total Score ask parents for a simple 'yes' or 'no', the scoring is simple: yes responses, as well as responses of 'sometimes' or 'often' (on the rare questions that request a frequency rating), receive 1 point (see the LUI-Italian Score Sheet for detailed instructions). The points are then summed to obtain a total score.

How should I interpret the results?

So far, we have collected data for children aged 18-47 months of age divided in 5-month intervals. Based on current data (N 389), we have calculated the means for the LUI-Italian Total Score and its subscales at five age range: 18-23, 24-29, 30-35, 36-41, and 42-47 months. The means for any of the age intervals are provided separately for boys and girls, given that girls had significantly higher scores than boys at the youngest ages. In Table 1, the means, standard deviations, and scores that are 1, 1.5, and 2 standard deviations below the mean, are presented for the Total Score and the two parts comprising the Total Score (for each of the five age range and for boys and girls). The 5 sets of tables in the Appendix present these means and standard deviations separately by subscale (for each of the five age intervals and for boys and girls). Please be aware that scores are referred to age intervals, as developmental differences are expected at every age month, based on original version of LUI, in the future, we aim to expand the sample in order to obtain data at each age month.

Table 1 is followed by an example of how to interpret the scores. Keep in mind that:
- the standard deviation measures the dispersion of scores around the mean
- the greater the dispersion, the larger the standard deviation
- a score 2 standard deviations below the mean is necessarily further from the mean than a score that is 1 or 1.5 standard deviations below the mean

How to interpret the results: an example

Here, we provide an example of how to interpret a score using Table 1. For a 25-month-old girl (see the first row for the 24-29 months age range), a total score of 38 is more than -2 standard deviations below the mean; a score of 39 to 53 is between -1.5 and -2 standard deviations below the mean; a score of 54 to 68 is between -1.5 and -1 standard deviations below the mean, and a score of 69 to 97 is less than -1 standard deviation below the mean of 97.34 (i.e, between 0 and -1 standard deviations).

Table 1. LUI-Italian Total Score: Children from 18 to 47 months old							
Age Range (months)	Sex and Number of Participants	Score	Mean	Standard Deviation	Score by number of standard deviations below the mean		
					-2	-1.5	-1
18-23	Girls (n = 29)	Total	44.00	24.84	n/a	6.74	19.16
		Part 2	18.66	7.31	4.04	7.70	11.35
		Part 3	25.34	19.74	n/a[1]	n/a[1]	5.6
	Boys (n = 28)	Total	41.86	30.01	n/a[1]	n/a[1]	11.85
		Part 2	16.54	8.40	n/a[1]	3.94	8.14
		Part 3	25.32	22.62	n/a[1]	n/a[1]	2.7
24-29	Girls (n = 53)	Total	97.34	29.18	38.98	53.57	68.16
		Part 2	24.96	4.46	16.04	18.27	20.5
		Part 3	72.38	26.35	19.68	32.86	46.03
	Boys (n = 48)	Total	78.69	32.70	13.29	29.64	45.99
		Part 2	21.88	6.44	9	12.22	15.44
		Part 3	56.81	27.58	1.65	15.44	29.23
30-35	Girls (n = 46)	Total	123.74	17.99	87.76	96.76	105.75
		Part 2	27.02	1.50	24.02	24.77	25.52
		Part 3	96.72	17.32	62.08	70.74	79.4
	Boys (n = 50)	Total	103.86	29.94	43.98	58.95	73.92
		Part 2	25.48	3.44	18.6	20.32	22.04
		Part 3	78.38	27.65	23.08	36.91	50.73
36-41	Girls (n = 35)	Total	128.09	17.10	93.89	102.44	110.99
		Part 2	26.49	1.84	22.81	23.73	24.65
		Part 3	101.60	16.03	69.54	77.56	85.57
	Boys (n = 29)	Total	116.17	37.50	41.17	59.92	78.67
		Part 2	24.69	5.83	13.03	15.95	18.86
		Part 3	91.48	32.89	25.7	42.15	58.59
42-47	Girls (n = 35)	Total	131.37	23.57	84.23	96.02	107.8
		Part 2	26.14	2.98	20.18	21.67	23.16
		Part 3	105.23	21.96	61.31	72.29	83.27
	Boys (n = 36)	Total	133.06	21.98	89.1	100.09	111.08
		Part 2	26.53	2.49	21.55	22.80	24.04
		Part 3	106.53	20.31	65.91	76.07	86.22

¹A score less than 0.

Can I convert scores in tables to percentile ranks?
Percentile ranks are not yet available for the LUI-Italian (but they are available for the original LUI in English). Although the current data cover the entire age range of the LUI, we will wait until the norming phase of our research is completed to conduct the appropriate analyses and be able to provide the relevant percentile ranks for raw scores for children of each age between 18 and 47 months.

How should I deal with scores of children of an age not shown in Tables 1?
Users administering the LUI-Italian with parents should apply the scores shown in Table 1… to children with caution, considering that there are referred to age intervals. Thus, it needs to keep in mind that the scores should not be compared to the norms for a given age.

Are the scores in Tables 1 based on the scores of children diagnosed with language disorders or pragmatic difficulties?
No, the cut-off scores are based on a sample of 389 typically developing children who had the following characteristics:

- spoke Italian and were exposed to Italian at least 80% of the time since birth
- resided within Italy (largely in the metropolitan city of central part of Italy or province)
- their parents were generally educated (48% of at least one parent had a university degree level education)
- children had *not* been diagnosed with a language delay or disorder, intellectual impairment, developmental delay, autism spectrum disorder, or other medical condition affecting language
- were born at term with adequate weight respect to gestational age

Thus, the scores were from Italian-speaking children in the general population, including children whose parents might have been concerned about their child's development.

How to interpret children's scores on parts and subscales?
Tables in the Appendix provide mean for the scores subscales for boys and girls. Since the subscales follow a developmental order, a child might score above the mean on one subscale, but below the mean on another more advanced subscale. Scores on subscales A and B (which deal with gestures) are not included in the total score and are thus excluded from the tables.

Appendix: Mean scores on scored subscales by child's age and sex

See page 2 of this guide for the subscale names

Girls 18-23 months (n = 29)				Boys 18-23 months (n = 28)		
Subscale (by Part)	Mean	Standard Deviation		Subscale (by Part)	Mean	Standard Deviation
Part 2				Part 2		
C	13.90	5.82		C	12.21	6.43
D	4.76	1.92		D	4.32	2.16
Part 3				Part 3		
F	2.55	1.62		F	2.61	1.73
G	3.24	2.70		G	2.46	2.70
H	7.45	7.75		H	8.18	8.45
H: about self	3.62	3.92		H: about self	4.25	4.84
H: about others	2.21	2.97		H: about others	2.86	2.55
I	3.17	3.26		I	3.54	3.28
J	0.62	0.98		J	0.57	0.88
K	2.90	2.04		K	3.11	2.11
M	3.34	2.89		M	2.61	2.70
N	2.07	3.17		N	2.25	3.77

Girls 24-29 months (n = 53)				Boys 24-29 months (n = 48)		
Subscale (by Part)	Mean	Standard Deviation		Subscale (by Part)	Mean	Standard Deviation
Part 2				Part 2		
C	19.08	3.88		C	16.63	5.31
D	5.89	1.50		D	5.25	1.54
Part 3				Part 3		
F	4.49	1.44		F	3.85	1.41
G	6.79	2.25		G	5.63	2.87
H	23.94	8.68		H	18.27	9.32
H: about self	10.98	3.58		H: about self	8.65	4.29
H: about others	9.42	4.90		H: about others	6.60	4.60
I	9.15	3.60		I	7.17	3.62
J	1.70	1.46		J	1.35	1.19
K	6.13	2.30		K	4.90	2.31
M	7.87	4.01		M	6.42	3.67
N	12.30	7.58		N	9.23	7.07

Girls 30-35 months (n = 46)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	20.70	0.87
D	6.33	1.12
Part 3		
F	5.17	1.08
G	8.30	1.60
H	30.7	4.47
H: about self	12.76	1.46
H: about others	14.00	3.60
I	11.20	2.38
J	2.26	1.36
K	7.96	2.27
M	10.65	2.53
N	20.48	7.89

Boys 30-35 months (n = 50)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	19.40	2.71
D	6.08	1.21
Part 3		
F	4.84	0.98
G	7.44	2.11
H	24.86	9.04
H: about self	11.16	3.49
H: about others	10.20	5.15
I	9.76	3.50
J	1.70	1.46
K	6.38	2.47
M	8.62	3.58
N	14.78	9.18

Girls 36-41 months (n = 35)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	20.40	1.24
D	6.09	1.04
Part 3		
F	5.31	0.93
G	8.51	1.07
H	32.00	4.28
H: about self	13.37	1.19
H: about others	14.83	2.94
I	11.66	2.39
J	2.43	1.48
K	8.20	2.40
M	11.11	2.44
N	22.37	7.08

Boys 36-41 months (n = 29)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	18.83	4.63
D	5.86	1.53
Part 3		
F	4.83	1.44
G	7.69	2.30
H	28.62	9.64
H: about self	12.31	3.40
H: about others	12.76	5.51
I	10.79	4.27
J	1.83	1.71
K	7.66	2.62
M	10.10	4.55
N	19.97	9.52

Girls 42-47 months (n = 35)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	19.97	2.42
D	6.17	1.22
Part 3		
F	5.23	1.46
G	8.37	1.94
H	32.37	6.88
H: about self	12.89	2.86
H: about others	15.77	3.53
I	11.86	2.56
J	2.17	1.54
K	8.57	2.15
M	11.86	2.33
N	24.80	7.64

Boys 42-47 months (n = 36)		
Subscale (by Part)	Mean	Standard Deviation
Part 2		
C	20.33	1.90
D	6.19	1.91
Part 3		
F	5.39	1.20
G	8.69	1.04
H	32.17	5.89
H: about self	13.22	2.14
H: about others	15.22	3.55
I	12.17	1.92
J	2.67	1.81
K	8.78	2.65
M	11.67	2.98
N	25.00	7.93