Adaptation of the Parent Report Language Use Inventory for 18- to 47-months-old children to European Portuguese: A Pilot Study

Adaptação do Inventário Parental "Language Use Inventory (LUI)" para crianças entre 18 e 47 meses para o Português Europeu: Estudo Piloto

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ABSTRACT

Purpose: Language acquisition and development takes in account the child's interaction with the surrounding environment. Daily social interactions with people and communication with others allow the child to acquire language being pragmatics considered a system of rules that support the communicative use of language. Identification and assessment of children at risk for language disorders are crucial in order to carry out an effective early intervention. This study was carried out taking into account first, the relevance of pragmatics as a component of language, and second the lack of assessment tools in Portugal to assess these abilities. Therefore, the aim of this study consists on the translation, adaptation and validation of the inventory "Language Use Inventory" (LUI), to European Portuguese. The LUI is a standardized parent report measure designed to assess pragmatic language development in children within 18- to 47-month-old. **Methods:** All procedures recommended by test adaptation guidelines were adopted in this study. A pilot study was carried out with a sample of 120 inventories, answered by the parents/caregivers of the Portuguese children in the target age groups. **Results**: Cronbach's alpha, which is a numerical coefficient of reliability obtained for the scale strongly confirm a very good internal consistency for the LUI-Pt with 0.97 for the total scale, and coefficients between 0, 71 - 0, 96 for the subscales. **Conclusion:** Preliminary results indicate the internal validity of the LUI-Pt for Portuguese children confirming its clinical usefulness as an assessment tool.

Keywords: Evaluation; Language Tests; Child Language; Communication; Early Intervention

RESUMO

Objetivo: A aquisição e o desenvolvimento da linguagem resultam da interação da criança com o meio ambiente. As interações sociais cotidianas com as pessoas e a comunicação com outros permitem que a criança adquira linguagem, sendo a pragmática o sistema de regras que suporta o uso comunicativo da linguagem. A identificação e a avaliação de crianças em risco de desenvolverem transtornos de linguagem são cruciais, tendo em vista a intervenção precoce eficaz. Tendo em vista a relevância da pragmática como componente da linguagem e a escassez, em Portugal, de instrumentos de avaliação da linguagem validados para idades precoces, a finalidade deste estudo consistiu na tradução, adaptação e validação do instrumento *Language Use Inventory* (LUI), para o português europeu. O LUI é um inventário parental que avalia o desenvolvimento da pragmática entre os 18 e os 47 meses. **Métodos:** Foram adotados todos os procedimentos recomendados pelas diretrizes internacionais sobre a adaptação de testes, culminando em estudo piloto com uma amostra de 120 inventários, respondidos pelos pais/cuidadores de crianças portuguesas da referida faixa etária. **Resultados:** Os coeficientes de consistência interna (Alfa de Cronbach) para a versão portuguesa do LUI situaram-se em 0,97 para a escala total e entre 0,71 e 0,96 para as subescalas. **Conclusão:** Os resultados preliminares dos estudos de adaptação e de validação do LUI-Pt para crianças portuguesas são promissores e asseguram a validade interna desta escala em termos da sua dimensionalidade e consistência interna.

Descritores: Avaliação; Testes de Linguagem; Linguagem Infantil; Comunicação; Intervenção precoce

Work realized at University of Minho, Braga, Portugal.
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Conflict of interests: No
Author´s contribution: *CSG* principal researcher, development of research, development schedule, review of literature, collection and data analysis, article writing, article submission and procedures, *ACS and LA* advisers, preparing research, data analysis, correction the wording of article, approval of the final version.
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Received: 5/20/2013; **Accepted:** 8/26/2013

INTRODUCTION

The concept of language is so wide that we can define it as the perspective in which we observe it, the intention with which we use language and the contexts in which it occurs. In a holistic perspective, we define language as a system of symbols (sounds, words and signs) organized on a regular basis, which allows humans to communicate with each other[1,2].

Acquisition and development of language takes into account the child's interaction with the surrounding environment, in other words, the daily social interactions with people and the communication with others are in the origin of children's language acquisition. This is a competence that integrates a complex combination of various components, phonological, syntactic, morphological, semantic and pragmatic rules[1,2]. Humans can use various forms of communication (oral, gestural, or written symbols), and "when [the] language code is used to communicate, is an inherently social phenomenon. Pragmatics is the study of language as it is used and when language is used in conversation it is a social behavior"[3].

Since the early 90s, many linguists devoted themselves to the study of language and has formulated many theories about its development. In this study, our focus take into account pragmatics development, understood as the domain of language rules and use, the ability to understand and use these rules, adapted into the communication context[1,2]. Consequently, we can analyze pragmatic as the ability to use language appropriately in social interactions with others[4].

Taking this into account, pragmatics can be defined as the system of rules that support the communicative use of language. So, pragmatics of nonverbal communication includes facial expressions, tone of voice, gestures and body posture, with extralinguistic and paralinguistic features providing the adequate context for interpreting the verbal message and the communicative intention of the interlocutors. Pragmatics of verbal communication includes, among others, turn-taking rules, initiative and communicative response to the speaker, maintaining a conversation topic with appropriateness of facial expression, and appropriate use of vocabulary in different social contexts[5-9].

Development of pragmatic starts from early age when, in the interaction, the baby and mother make eye contact and exchange facial expressions. Within a few months the baby starts to perform shifts of vocalizations, imitation and respond to facial expression of the mother. The exchange of gaze and production of vocalizations mark the beginning of the communicative use of language and confirms that language influences social behavior (behavior of other people)[5-9]. Summarizing, throughout its development, the child acquires and makes use of the native language, and may even use a single word complemented with facial expressions, intonation changes, or pointing. That said, pragmatics is a component of language that, although not clearly defined yet, is the basis of communicative interaction crossing the remaining components.

Over the past decades, many studies about language were published in several countries. However, research on the pragmatics development is newer as compared with the remaining components of language. The perception that pragmatics emerges transversally to others components, illustrates the relevance of this study.

Deriving from scientific advances and, given the lack of instruments to assess pragmatic skills in Portugal, the aim of this study is to adapt and validate a parent report measure – the "Language Use Inventory", developed to assess young children's pragmatic language development" (LUI)[10].

The LUI is a parent report measure, taking into account that parents and/or caregivers are able to perform this assessment, since they interact with the child for a long time[11]. The parent report measure has the advantage of presenting results based on extensive knowledge and experience of parents in relation to the language skills of their child in a variety of natural contexts and everyday situations. This enables a more comprehensive assessment of the child's competencies, increasing the reliability of the information. In sum, these parental reports generally demonstrates a more realistic and contextual assessment of the child's linguistic performance, which may not be determinate by a formal test[11-19]. Furthermore, the LUI is an inventory in which parents and caregivers assess the child's language at an early age, 18- to 47-months-old, taking into account an assessment and intervention based on the family report.

In this paper results obtained in the pilot study are presented. These preliminary data result from the process of translation, adaptation and validation of the inventory "Language Use Inventory: An Assessment for Young Children's Pragmatic Language Development" (LUI) into European Portuguese. The study is part of a research project that intends to standardize the LUI for the Portuguese population, and to establish normative guidelines for the screening and diagnosis of language disorders.

METHODS

Participants

For this pilot study, 180 inventories were distributed randomly in day care centers and kindergartens located in the districts of Braga and Porto, Portugal remaining 120 to be analyzed; 36 were not returned and 24 were excluded according to the guidelines of the original instrument.

The inclusion criteria for the study was: a) child age range 18- 47 months, b) presence of oral language, c) child exposed to other languages than Portuguese over 20% of the time, and d) Portuguese as a second language, if the child's exposure started at least one year ago when assessed. The exclusion criteria for the study was: a) absence of more than two answers

in the ten subscales of the LUI, b) existence of nonverbal language only, b) confirmed hearing loss, c) prematurity of at least 2 weeks and co-occurrence birth weight of less than 2.5 kg, and d) diagnose of a developmental disability; speech or language problem or delay; significant birth complications, or other major health problems, generally recognized as resulting in delay or impairment in language or cognitive development.

The participants of the sample were parents and caregivers of children, namely females (40.8%) and males (59.2%). Participant's description considering gender and age groups is presented below (Table 1).

Table 1. Sample distribution groups (n=120)

Group	Age in months	Group distribution (%)	Gender (%)	
			Female	Male
1	18-23	16.7	9.2	7.5
2	24-29	27.5	10	17.5
3	30-35	24.2	8.3	15.9
4	36-41	20.0	7.5	12.5
5	42-47	11.6	5.8	5.8

Instrument

The "Language Use Inventory: An Assessment for Young Children's Pragmatic Language Development" (LUI)[10], a standardized parental report was used. The LUI was developed in Canada, under the authorship of Daniela O´Neill over ten years, and focused on the early development of pragmatics occurring in children 18- to 47-months-old.

This inventory consists of 14 subscales organized into three parts: Part 1: How your child communicates with gestures (two subscales); Part 2: Your child's communication with words (three subscales); Part 3: Your child's longer sentences (nine subscales). The LUI total score is obtained by adding the scores of ten subscales of the parts 2 and 3 (C and D; F - K, M and N). The subscales E and L are not included in the total score. These subscales require written answers from parents/care givers, in order to provide additional information about the child's interests, including preferential conversation topics. These three parts of the LUI assess child's communication in a wide range of settings, and broad variety of functions including, for example, requesting help, sharing focus of attention, asking and commenting about things and people; guiding interactions with other people; sharing humor; talking about language and words; adapting communication to other people; and building longer sentences and stories.

The LUI inventory allows the identification/screening of children with delay or impairment in pragmatics language development, namely the use of language in different contexts and social interactions, when comparing to children of the same gender and age range (in months). According to the extensive research conducted the inventory presents reliability and validity that suggest it's clinical and educational usefulness.

Procedures

The process of translation and adaptation of the inventory was extensive and complex, following the guidelines of other similar instruments. In relation to the translation and retroversion process a qualitative analysis was conducted in order to understand the relevance of all items/significance by parents/caregivers. This process includes several steps as a method to provide accuracy and validity of data[20-25].

1. Request for authorization

In an adaptation process of a tool into another language several legal issues related to copyright and private rights must be accomplished[21]. Therefore, we requested permission for the instrument's author and the publisher Knowledge in Development for the purposes of translation, adaptation and validation of the "Language Use Inventory: An Assessment for Young Children's Pragmatic Language Development" into European Portuguese. After their written approval, all partners signed a formal contract for research purposes.

2. Translation

In the translation process several assumptions were conducted in order to ensure similarity between the original instrument and the Portuguese translation. A panel of experts ensured that the final version of the Portuguese translation had internal validity, as well as correspondence in terms of content and semantics of the items[21]. First, the LUI was translated from English into Portuguese, by a native Portuguese with English fluency. Then the version translated into European Portuguese was again translated into English by native English with fluency in Portuguese, following the international standards for this purpose. Both versions, the original and translated were compared and in general, uniformity, content consistency and semantics were established.

3. Review of translation and socio-cultural adaptation

Due to socio-cultural differences between different countries and, in this case between Canada and Portugal, consistency and uniformity of all items in both languages was verified [21]. A panel of three experts in the field of linguistics and child development in early childhood, performed revisions of the instrument and suggested semantics changes (verbs, adjectives, common nouns) and syntactic (simplified set) modifications in the adaptation process. Both versions, original and translated, were again compared showing evidence of correspondence in terms of assessed skills and adaptation to the each cultural context.

4. Thinking aloud

In order to analyze and certify the existence of ambiguous content of the items a spoken reflection, thinking aloud sessions, with a small group of parents was conducted[20]. This group was composed by ten parents from the regions of high population density, combining urban and rural regions (distributed from the north and south of Portugal) with the purpose to analyze and identify linguistic singularities. Parents reports and comments were all analyzed, with the following modifications being conducted: a) inventory structure - layout of the header, underlined and bold; grammar aspects - simplification of sentences, b) withdraw of the personal pronouns, c) phrases beginning with the verb form, and uniformity in every sentence, d) the pronoun referring to the father/mother was transformed into the 3rd singular person, and e) semantic features - adequacy of examples to the Portuguese culture were incorporated. The final version of the LUI-Pt integrated all items of the original version although with modifications.

5. Pilot study

A pilot study is usually conducted before a normative study is performed. The aim is to determine responses dispersion, internal consistency of each item and the internal validity of the instrument itself[20-25]. So, was assembled a group of participants, constituting a sample of 120 parents and caregivers with the same characteristics of the population sample target, which was distributed the LUI-Pt (Portuguese version). Participants signed an informed consent form, assuring confidentiality of responses as established by the Ethics Committee of the University of Minho. The protocols were statistically analyzed using SPSS, version 20.0.

RESULTS

The LUI-Pt has 180 items in total, corresponding to the items of the original version. Most items (89%) corresponds to dichotomous responses, "yes" or "no" and the other items (11%) responses are classified according to a Likert type format, with the options "no longer uses" (only on subscale A) or "never", "rarely", "sometimes" and "often".

In the protocol, parents also provide information related to birth, general behaviors, health condition, language competencies of the child, and acquisition of another language in addition to Portuguese.

In order to verify the internal consistency index, Cronbach's alpha coefficients for the three parts and the 14 subscales of the LUI-Pt were performed (PT Alpha). All coefficients obtained were compared with the original version (Alpha EN)[19] and are described in Table 2.

The three parts of LUI-Pt showed high internal consistency

Table 2. Cronbach´s alpha coefficients in LUI Original and adapted to European Portuguese

	Alpha EN	Alpha PT	Nº of items
Part 1: How your child communicates with gestures	0.91	0.87	13
A: How your child uses gestures to ask for something	0.92	0.88	11
B: How your child uses gestures to get you to notice something	0.55	0.29	2
Part 2: Your child's communication with words	0.95	0.92	28
C: Types of word's your child uses	0.93	0.91	21
D: Your child's requests for help	0.87	0.73	7
E: Your child's interests	----	----	2
Part 3: Your child's longer sentences	0.99	0.98	133
F: How your child uses words to get you to notice something	0,83	0.72	6
G: Your child's questions and comments about things	0.91	0.87	9
H: Your child's questions and comments about themselves/other people	0.98	0.94	36
I: Your child's use of words in activities with others	0.94	0.92	14
J: Teasing and your child's sense of humour	0.80	0.71	5
K: Your child's interest in words and language	0.86	0.84	12
L: Your child's interests when talking	----	----	4
M: How your child adapts conversation to other people	0.93	0.92	15
N: How your child is building longer sentences and stories	0.98	0.96	36

Note: EN = English (LUI Original); PT = Portuguese (LUI adapted to European Portuguese)

Table 3. Cronbach´s alpha coefficients for subgroup 1 and 2

	Subgroup 1 (18-30 m)	Subgroup 2 (31-47 m)
Part 1: How your child communicates with gestures	0.82	0.85
A: How your child uses gestures to ask for something	0.83	0.87
B: How your child uses gestures to get you to notice something	*	0.37
Part 2: Your child's communication with words	0.92	0.88
C: Types of word's your child uses	0.91	0.88
D: Your child's requests for help	0.75	0.59
E: Your child's interests	----	----
Part 3: Your child's longer sentences	0.98	0.97
F: How your child uses words to get you to notice something	0.80	0.52
G: Your child's questions and comments about things	0.83	0.72
H: Your child's questions and comments about themselves/other people	0.96	0.93
I: Your child's use of words in activities with others	0.90	0.88
J: Teasing and your child's sense of humour	0.59	0.69
K: Your child's interest in words and language	0.79	0.74
L: Your child's interests when talking	----	----
M: How your child adapts conversation to other people	0.90	0.84
N: How your child is building longer sentences and stories	0.95	0.93

*** Was not possible to calculate because of the ceiling effect of those items**

(α>0.98). However, when analyzing each subscale results illustrate that the subscales A, C, G, H, I, K, M and N have high internal consistency (α from 0.84 to 0.96), subscales D, F and J, have a suitable index of internal consistency (α between 0.7 and 0.8) and B subscale, have a weak internal consistency of its items (α<0.3). The subscales E and L consist on open questions and don't present a numerical score, reason why they were not included in the final score of the LUI-Pt.

To verify the differences and the usefulness of the instrument, we divided the sample into two subgroups. The first subgroup was composed by the participants from 18 to 30 months, and subgroup 2, composed by participants from 31 to 47 months. Alpha coefficients of both subgroups are shown in Table 3.

DISCUSSION

The first aspect to note in this study is the completion time of the inventory. In the original version, author mentions that parents/caregivers take about 22-35 minutes to complete LUI[19]. In Portugal, they take about 30-45 minutes to fill the LUI-PT.

According to O'Neill, in its original version, the LUI has alpha coefficients for the three parts and seven of twelve subscales of 0.9 or higher. The alpha coefficient for part 2 and 3 comprising the total score of the LUI was 0.99. The alpha coefficients for the remaining subscales except subscale B, were all at acceptable levels, or above 0.80. The low coefficient of alpha for subscale B (0.55) can be explained by the small number of items, comparing with the other subscales, and the fact that all age groups are close to the maximum score[19].

The three parts and subscales of LUI-Pt showed good reliability, except subscale B, which showed weak internal consistency, which can be justified by the fact that, while the alpha coefficient of results variance depends on the number of items and on the total subscale, its calculation could be affected for being a subscale with only two items. Even so, the difference between the coefficient obtained and the coefficient found in the original version, qualifies greater heterogeneity of Portuguese parent responses to the two items, and may even justify the inclusion of more items in this subscale. Analysis of the alpha coefficients of both versions indicates that coefficients obtained in the translated version were similar to the original version, with a good reliability. This proximity is clear if we compare the total score of Part 2 and 3, for 161 items where the alpha coefficient was 0.99 for the original version and 0.98 for the translated version.

Additionally, alpha coefficients for subgroups 1 (18-30 months) and 2 (31-47 months), were also analyzed, with a good reliability of most subscales. For the subgroup 1 it was not possible to calculate the coefficient alpha for subscale B,

since the subscale has only two items, as well as a constant performance across all participants in the sample. In subgroup 1, the subscale J (0.59) and in Subgroup 2, the subscales B (0.37), D (0.59) and F (0.52) showed low internal consistency. These coefficients can be justified based on the small number of items at each subscales, or taking into account another approach related to the high frequency of those communicative behaviors.

CONCLUSION

The relevance of language in the child's cognitive-linguistic processing, from the earliest age, and the lack of evidence to assess the pragmatics of language in Portugal, justifies the purpose of this study: the translation and adaptation of the LUI. Since its original version illustrates clinical and educational utility in assessment of pragmatics competence in English-speaking children, the Portuguese version was conducted and is well proven. Psychometric properties of the instrument were analyzed, and internal consistency coefficients very similar to those obtained in the original version. Only one subscale showed an alpha coefficient greatly reduced, which seems to be explained by the existence of only two items. However, further analysis is justified, since Portuguese parents do not associate the same pattern of response to the two items. Also, one suggestion is related to a higher number of items in this subscale.

In future, standardization of the LUI will be conducted in order to obtain performance criteria and linguistic markers related to pragmatic skills in children 18- to 47-month-old. The aim of this research project is to develop an assessment tool usefulness for early intervention childhood, in order to provide an early diagnosis and contribute to an early intervention for children with language disorders and/or communication disorders.

ACKNOWLEDGMENT

To the Science and Technology Foundation, I.P, for the doctoral scholarship, support given to this study, under case number SFRH/BD/76861/2011.

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