# Cultural adaptation of the Test of Narrative Language (TNL) into Brazilian Portuguese

# *Adaptação cultural do Test of Narrative Language (TNL) para o Português Brasileiro*

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## ABSTRACT

**Purpose:** To accomplish the translation and cultural adaptation of the Test of Narrative Language (TNL) into Brazilian Portuguese. **Methods:** The TNL is a formal instrument which assesses narrative comprehension and oral narration of children between the ages of 5-0 and 11-11 (years-months). The TNL translation and adaptation process had the following steps: (1) translation into the target language; (2) summary of the translated versions; (3) back-translation; (4) checking of the conceptual, semantics and cultural equivalence process and (5) pilot study (56 children within the test age range and from both genders). **Results:** The adapted version maintained the same structure as the original version: number of tasks (both, three comprehension and oral narration), narrative formats (no picture, sequenced pictures and single picture) and scoring system. There were no adjustments to the pictures. The "McDonald's Story" was replaced by the "Snack Bar History" to meet the semantic and experiential equivalence of the target population. The other stories had semantic and grammatical adjustments. Statistically significant difference was found when comparing the raw score (comprehension, narration and total) of age groups from the adapted version. **Conclusion:** Adjustments were required to meet the equivalence between the original and the translated versions. The adapted version showed it has the potential to identify differences in oral narratives of children in the age range provided by the test. Measurement equivalence for validation and test standardization are in progress and will be able to supplement the study outcomes.

## RESUMO

**Objetivo:** Realizar a tradução e a adaptação cultural do *Test of Narrative Language* (TNL) para o Português Brasileiro. **Método:** O TNL é um instrumento formal que avalia a compreensão e a narração oral de crianças entre cinco e 11 anos e 11 meses. O processo de tradução e adaptação do TNL teve as seguintes etapas: (1) tradução para a língua-alvo; (2) síntese das versões traduzidas; (3) retrotradução; (4) verificação do processo de equivalência conceitual, semântica e cultural; e (5) estudo-piloto (56 crianças, mesma faixa etária do teste e de ambos os gêneros). **Resultados:** A versão adaptada manteve a mesma estrutura da versão original: número de tarefas (três de compreensão narrativa e três de narração oral), formatos de narrativa (sem apoio de figura, figuras em sequência e figura única) e sistema de pontuação. Não foram realizadas adaptações nas figuras do teste. A história "*McDonald's Story*" foi substituída pela história "História da Lanchonete", para atender à equivalência semântica e experiencial da população-alvo. Nas demais histórias, foram realizadas adaptações semânticas e gramaticais. Diferenças estatisticamente significantes foram encontradas nas comparações entre os escores brutos (compreensão, narração e total) dos grupos etários, a partir da versão adaptada. **Conclusão:** Adaptações foram necessárias para atender à equivalência semântica e experiencial da população-alvo, considerando o contexto sociolinguístico-cultural do Brasil. A versão adaptada apresentou equivalência conceitual de itens, semântica e operacional em relação à versão original. A equivalência de mensuração para fins de validação e normatização do TNL está em andamento e poderá complementar os resultados deste estudo.

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## INTRODUCTION

In the early years of life, the communicative interaction situations experienced by the children are strongly marked by the use of spoken language. On the other hand, the conversation, the oral narrative of scripts and, posteriorly, the story narrative represent the first models of narrative system with which the child has contact[1].

This system consists of a gradual form throughout the development as the child is socially exposed to different models of organizational representation of language by means of interactions that are established mainly at the family and school environment[2] in accord with the development of a neuro-functional architecture which is made of a complex neural network involving different brain areas of both hemispheres[3,4].

Researchers have showed over the years that the performance of preschool children at the oral narrative can predict future problems in the literacy process[5], as well as predict the textual competence at preschool age[6]. Thereby, the use of quantitative and qualitative methods in order to investigate the oral narrative has been valued among the formal and informal procedures of language evaluation[7-11].

Among the formal instruments to investigate the oral narrative, we can mention the "Test of Narrative Language" (TNL)[12]. This instrument has the purpose of investigating the performance of children between the ages of 5-0 and 11-11 (years-months) in tasks of narrative comprehension and oral narrative of real and fictional stories from three different task formats: no picture, sequenced picture and single picture.

At the international context, TNL has been used: (a) as a measure to correlate narrative performance to the performance in reading skills, as to discuss the predictive role of oral narrative in the academic learning process[5]; (b) in pre and post narrative intervention to monitor changes in the aspects of micro and macrostructures of the oral narrative[13] and (c) in the investigation of specific aspects of oral narrative of children showing a delay in language development[14].

As far as we are concerned, there is not a formal instrument in order to investigate the oral narrative which has been built or adapted to our linguistic culture up to now. Among the revision studies obtained at the survey of language formal instruments which were adapted and validated or the ones that are in adaptation process in Brazil[15-17] it is observed that there is not a reference to any formal instrument that has the purpose of investigating oral narrative.

For this purpose, the aim of the present study was to accomplish the translation and cultural adaptation of the Test of Narrative Language (TNL) to Brazilian Portuguese.

## METHODS

### Ethical aspects

The study was approved by the Research Ethics Committee (#1016/2014). All the individuals consented their attendance by signing an Informed Consent Form and presenting a Consent Form which were made specifically for these research purposes, according to the resolution of the National Health Council – CNS 466/12 under the guidelines and standards regulating research involving human beings.

### Description of the instrument

The Test of Narrative Language (TNL)[12] is a formal instrument with reference norm for the American population and that was developed to evaluate the performance of children ages between 5 and 11 years 11 months old in tasks of narrative comprehension and oral narration of real and fictional stories. The test is composed by six tasks organized in two subtests (narrative comprehension and oral narration), from three different formats: no picture, sequenced pictures and single picture.

#### a) Narrative comprehension subtest

The narrative comprehension is measured by questions made after presenting the story orally: no picture (Task 1), sequenced pictures (Task 3) and single picture (Task 5).

The questions are from inferential literal purpose and they aim to collect the ability of the children to listen and understand words and sentences, as well as make relations among the central ideas of the narrative theme. The children are questioned about specific information presented in each one of the stories (e.g., name of the characters, scenery, events and main problem) and they are assigned one point for each correct answer, judged according to the examiner's manual orientations.

A peculiarity of Task 1 is that, at the end of the oral presentation of the story by the examiner, it is asked that the child suggests a resolution for the complication presented ("What do you think they should do?"). This question aims to get information about the child's ability of suggesting a coherent resolution that is closely connected with the problem of the story.

#### b) Oral narration subtest

The oral narration is measured by (a) retelling no picture cue (Task 2), (b) production with sequenced pictures (Task 4) and (c) production with scene pictures (Task 6).

The task of retelling (Task 2) demands the child to reproduce the story presented in Task 1 reliably. The child performance is measured by the presence of the main information of the story in the retelling (e.g., time reference, name of the characters, specific information about the scenery, verbs and their inflections), and assigning one point for each information presented.

In tasks 4 and 6 the performance is measured by the information transmitted in the stories that are built by the child. This information meet both the story content (shown in the pictures) and the macrostructure (scenery; characters; story elements – including complication, action and events; temporal relation; causal relation; consequence; outcome; global consistency and creativity) and microstructure (vocabulary and grammar – including the description of objects; pronoun reference, verb tense; grammatical structure of the sentences over the narration and the use of cohesive elements) dimension of the narrative. The information from the oral narration of

the stories must be identified and classified in a score system that ranges from zero to two points (e.g., 0=three or more grammatical errors; 1=one or two grammatical errors or 2=no grammatical error).

## c) Scores provided by the instrument

The measures provided by the TNL allow us to establish values that represent separately the performance in the narrative comprehension and oral narration subtest. These measures are represented by the raw score, age equivalent, and standard percentile score. The test also predicts a global measure represented by the Narrative Language Ability Index (NLAI), percentile rank and descriptive rank of the child's performance (very superior, superior, above average, average, below average, poor and very poor).

## The process of translating and adapting the instrument

The process of translating and adapting the TNL to Brazilian Portuguese (TNL-BP) was obtained through a formal authorization of the PRO-ED Inc. publisher, which is responsible for the instrument trading. This process was carried out following five steps (Figure 1) – that are regarded as crucial for the adaption of the instruments among cultures[18,19]. Here they are:

**Step 1.** The translation from the original version (English) to the target language (Brazilian Portuguese) made by two bilingual and certified translators generating two translated versions (TNL-BP1 and TNL-BP2).

**Step 2.** A comparison between the two translated versions in order to identify the existence of possible discrepancies between the versions; adaption of items for the evaluation of the semantic and cultural equivalence and a discussion with the committee of experts (three Brazilian speech-language pathologists) for final adjustments and proposition of an overview version of the TNL-BP.

**Step 3.** Back-translation of the overview version of the TNL-BP to its original language, made by a third bilingual certified translator who didn't know the original test and the goal of the research.

**Step 4.** A comparison between the back-translation and the original version of the test in order to evaluate the conceptual, semantic and cultural equivalence between the versions made by the committee of experts (three Brazilian speech therapists and the first author of the original test) for proposition of the pre-final adapted version of the TNL-BP. A fourth expert (Brazilian linguist) was consulted for situations in which a bigger difficult was found at the transposition of concepts between the original language and the target language.

**Step 5.** A pilot study within the application of the pre-final adapted version of the TNL-BP at the target population in order to verify and evaluate the operating equivalence of the test in terms of its comprehensibility, way of application and scoring (score system) and criteria for interpretation to generate the final adapted version.

**Step 5a. Participants of the pilot study.** The pilot study was composed by 56 children between the ages of 5-0 and 11-11 (years-months) of both genders who attended 1st to 6th grades of elementary public schools in the countryside of São Paulo State. The socio-economic level of the children ranges from B2 to D-E, according to "Critério de Classificação Econômica Brasil"[20]. The socio-demographic information about the participants is shown in Table 1.

The inclusion criterion was: (a) the parents and children's acceptance formalized respectively by the signature of the Informed Consent Form and Consent Form; (b) negative historical delay informed by the parents at the neuropsychomotor development, showing damage at the hearing and/or visual acuity and (c) academic performance classified as average informed by the teacher when compared to the other classmates.
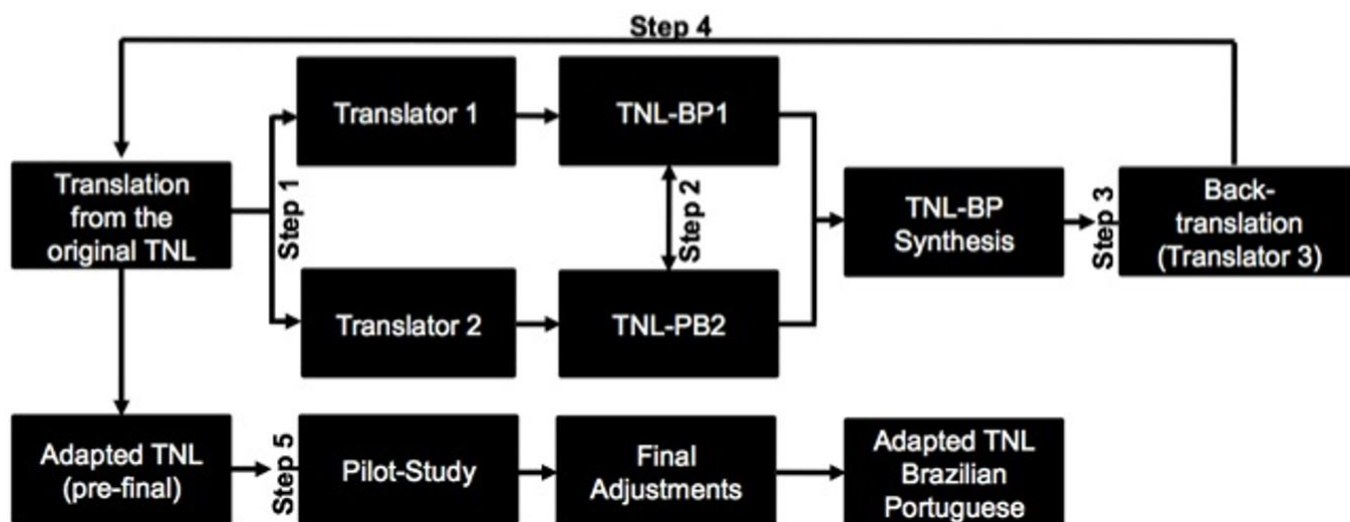


**Figure 1.** Schematic representation of the process stages of the translation and cultural adaptation to Brazilian Portuguese of the Test of Narrative Language

**Table 1.** Age, gender, academic year and socio-economic classification distribution of the participants in the pilot study

| Age-group | Age-range | Gender | Grade | Socio-economic classification |
|---|---|---|---|---|
| **5 years** **(n=8)** | 5 to 5-11 years-months | 5F:3M | 1 (n=8) | C1 (n=3) C2 (n=3) D-E (n=2) |
| **6 years** **(n=8)** | 6 to 6-11 years-months | 4F:4M | 2 (n=8) | B2 (n=1) C1 (n=4) C2 (n=3) |
| **7 years** **(n=8)** | 7 to 7-11 years-months | 4F:4M | 2 (n=3) 3 (n=5) | B2 (n=2) C1 (n=3) C2 (n=2) D-E (n=1) |
| **8 years** **(n=8)** | 8 to 8-11 years-months | 4F:4M | 3 (n=8) | B2 (n=1) C1 (n=3) C2 (n=3) D-E (n=1) |
| **9 years** **(n=8)** | 9 to 9-11 years-months | 4F:4M | 4 (n=8) | C1 (n=4) C2 (n=3) D-E (n=1) |
| **10 years** **(n=8)** | 10 to 10-11 years-months | 4F:4M | 4 (n=2) 5 (n=6) | B2 (n=2) C1 (n=5) C2 (n=1) |
| **11 years** **(n=8)** | 11 to 11-11 years-months | 4F:4M | 5 (n=4) 6 (n=4) | B2 (n=1) C1 (n=5) C2 (n=2) |

**Caption:** F=female; M=male

The information related to the child's development was obtained through an interview with the parents, who answered the following information about their children: (a) identification: date of birth, age and current grade at school, weight and height at birth; (b) previous history: speech-language, psychological and/or pedagogical intervention – prior or current; at what age the child walked for the first time and spoke the first words; complain about hearing loss or visual acuity deficits; complain memory and/or attention problems; report of some existing genetic or neurological disease.

**Step 5b. Performance analysis of the participants in the pre-final adapted version of the TNL-BP.** The children were filmed throughout the test application, following the examiner's manual recommendations. The narrations were fully transcribed and the scoring of the tasks was made with the support of the transcribed material and the video.

The rating of the TNL tasks was made according to the criteria established in the examiner's manual in order to establish the following scores: (a) narrative comprehension raw score, obtained from the sum of the number of hits in tasks 1, 3 and 5 and (b) oral narration raw score, obtained from the sum of the number of hits in tasks 2, 4 and 6; (c) total raw score – from the sum of both raw scores of the subtests (comprehension and narration) and finally, (d) the Narrative Language Ability Index (NLAI) – from the sum of both the comprehension and narration standard scores.

The narrative comprehension and oral narration standard scores were established from the conversion tables available in the examiner's manual. From the NLAI it was possible to establish a descriptive classification of the participants (very

superior, superior, above average, average, below average, poor and very poor). The measures obtained from the raw score, including NLAI, as well the descriptive classification were used in this study only to explore whether the scores obtained by the children in the pilot study represented the expected score for their chronological age, according to the normative data of the American population.

Data was analysed by descriptive statistic and the non-parametric statistical test, Kruskal-Wallis test for the comparison of the age groups from the raw scores (narrative comprehension, oral narration and total raw score).

**RESULTS**

**Steps 1 and 2. Translation and comparison between the translated versions**

Both translated versions of the TNL to Brazilian Portuguese (TNL-BP1 and TNL-BP2, Stage 1) did not show significant discrepancies (semantic and idiomatic) (Stage 2). The discrepancies found were primarily marked by one-off situations by semantic synonymy (e.g., "go for a walk and take a walk", "choose and decide") and by sentences with similar meanings which were written differently (e.g., "listen carefully and listen very attentively").

During the compilation of the TNL-BP1 and TNL-BP2 versions - in order to generate the overview version (Stage 2) – we made adaptations considerable relevant by the researchers in order to meet the semantic and cultural equivalence between the original and the overview versions. We made adjustments of non-representative elements for the local culture (e.g., name of characters) or whose translation adopted the Brazilian

Portuguese educated language replaced by the colloquial language (Table 2).

At the TNL-BP overview version, two out of three stories that are part of the narrative comprehension tasks (Tasks 3 and 5) were kept as the original version, and we made adaptions of semantic and syntactic nature in order to meet the idiomatic and conceptual equivalence (Table 2). "The McDonald's Story" which is the basis of TNL Tasks 1 (narrative comprehension)

**Table 2.** Adaptations made at the tasks of the Test of Narrative Language in relation to the original version

| Tasks | Original | Adapted TNL-BP | Observations |
|---|---|---|---|
| Tasks 1 and 2 | McDonald's Story | A história da Lanchonete | Replacement of the title of the story by another one in order to adapt the local culture equivalence. |
| | "What do you like to order?" | "O que você gosta de pedir quando vai numa Lanchonete?" | The repetition of the word "Lanchonete" (Snack Bar) at the question promoted the younger children's understanding at the pilot study. |
| | Lisa and Raymond | Sofia e Pedro | Common first names in Brazil and of easy pronunciation. |
| | "They jumped into the car …" | "Eles correram para o carro..." | It is an idiomatic expression with a figurative meaning in English. We made a replacement by an expression of similar meaning. |
| | "…and their mother drove them to…" | "… e a mãe levou eles para…" | "...e a mãe os levou para..." is a translation that meets the standard language. We chose to use "...levou eles para..." that meets the coloquial language. |
| | "She couldn't decide whether to get a Big Mac or a Happy Meal…" | "Ela não sabia se queria um X-salada ou um Hambúrguer..." | It was checked at the pilot study that the children used more the structure "...não sabia se queria..." than "...não conseguia escolher...". |
| | "…Cheeseburger…" "…French fries…" "…Vanilla milkshake…" "…Happy Meal…" | "…Cachorro quente…" "…Batatas fritas…" "…Suco de laranja…" "…X-salada…" | Name of typical sandwiches in different social contexts and regions in Brazil. |
| | "…salad…" | "…torta…" | Salad is not a common food to be found in the menu at Snack Bars in Brazil. We chose "pie" which is easily found in the street Snack Bars in the country. |
| | "She had left it..." | "Ela tinha esquecido a bolsa..." | "Ela havia esquecido-a..." or "Ela havia esquecido a bolsa..." meet the standard language. We chose to use the verb "to have" plus the irregular participle of the verb "to forget" (forgotten) because it is more used in the colloquial language. |
| | "…Dollars…" | "…Reais…" | Brazil currency. |
| Task 3 | The Shipwreck Story | A História do Naufrágio | We kept the original title and story. |
| | "...an art Project..." | "...uma escultura..." | "Um projeto de arte" é uma tradução correta. We chose the term "escultura" since it refers to the creation of artistic objects – shown in picture 3 by the construction of the ship. |
| | "Her ship was ruined..." | "O navio dela quebrou..." | "O navio dela ficou arruinado" is also an accepted translation, however we chose the term "quebrado" because it is more common in diferente age-groups and social contexts. |
| | "...she felt terrible" | "...ela ficou triste" | "Ela se sentiu terrível" or "Ela se sentiu mal" are accepted translations. The option "...ficou triste..." considered two aspects: (1) The feeling of "tristeza" is an emotional state easily recognized and named by children of different age-groups and social contexts and (2) the copula "ficar" to express the sadness state which is more used at colloquial language, and which also benefits its use by the children, since the verb "to feel" requires a pronominal placement "sentiu-se" in order to meet the standard language. |

**Table 2.** Continued...

| Tasks | Original | Adapted TNL-BP | Observations |
|---|---|---|---|
| Task 4 | Late for School Story | A história do menino atrasado para a escola | The word "boy" was added to the title in order to better adjust the sentence structure to Brazilian Portuguese and to make possible to keep the word "history" in the title like the original version. |
| | A/A+ | 10/10+ | The school grade can vary among schools. At the pilot study, prior the application, we asked the child which grade was used at school. The scale zero to ten was the classification the children were more familiar with. |
| Task 5 | The dragon story | A história do Dragão | We kept the original title and story. |
| | Daniel and Michelle | Daniel e Luiza | "Michelle" was replaced by "Luiza" because it a more common first name in Brazil and of easy pronunciation. |
| | "...eyes wide in terror..." | "...olhos arregalados de medo..." | "Fear" unlike "terror" is a feeling that is very well-known by children of different age-groups and social contexts. "Fear" along with "eyes wide" form a very common and widely used expression in our linguistic culture. |
| Task 6 | Aliens Story | A história dos Alienígenas | At the pilot study, the children used more often the word "Alienígenas" instead of "Aliens" |
| Instructions Tasks 1, 3 e 5 | " I want you to listen to a story ... Listen carefully" | "Eu vou te contar uma história ... Escute com muita atenção" | The instruction "Eu quero que você escute" was adapted to "Eu vou te contar": (a) this instruction often preludes story listening activities and (b) and also to avoid repetitions of the verb "to hear" in very close sentence structures. |
| Instructions Tasks 1, 3 e 5 | "...I'll ask you some questions..." | ...eu vou fazer algumas perguntas... | "...Eu farei algumas perguntas..." meets the standard language. However, the use of simple future is often replaced by the compost form "Eu vou fazer" at colloquial language. |
| Instructions Tasks 3 and 5 | "... I'm going to tell you a story that goes with the pictures..." | "...Eu vou te contar uma história com essas figuras..." | "...Eu vou te contar uma história que acompanha essas figuras..." is an accepted translation. However, we chose to use "…com essas figuras…" assuming that the pictures act as a resource with which the story is narrated orally. |

and 2 (oral narration by retell) was replaced by "The Snack Bar Story".

Adaptations at the pictures that are part of the narrative elicitation materials were not made, likewise at the structure of the material in terms of number of items that compose the test as well as at the scoring system (items to be scored and maximum score by task) in relation to the original version (Figure 2).

### Step 3 and 4. Back-translation and evaluation of the conceptual, semantic and cultural equivalence between the original and translated versions

The back-translation of the TNL-BP overview version to the original language (Step 3) was compared to the original version of the test and evaluated by the committee of experts, composed by experienced Speech Therapists at the language area (three Brazilian Speech-Language Pathologists and one American Speech-Language Pathologist - first author of the original test) (Stage 4). The committee concluded that the adapted version met the necessary equivalences (semantic, conceptual and cultural) in relation to the original version of the test.

### Stage 5. Pilot study

It was found at the pilot study that the children did not show difficulty in understanding the instructions of the tasks as well as answering both the narrative comprehension and the oral narration tasks.

To make sure about the adaption made in relation to the topic of the story in tasks 1 and 2 ("McDonald's Story" adapted to "Snack Bar Story"), the poll question in the run-up of the oral presentation of the story was showed in two versions: translated ("Have you ever eaten at McDonald's?") and adapted ("Have you ever eaten at a snack bar?). It was found that 30 out of 56 children (53,5%) answered "no" to the question about McDonald's and only 12 children (21,42%) answered "no" to the question about the snack bar, in such a way that most children at the pilot study informed they have already had at least one meal at a snack bar.

While applying the pre-final version of the TNL-BP it was found a necessity of final adjustments. The adaptations made throughout the process are gathered at Table 2.

The Kruskal-Wallis test showed that there was a significant statistic difference among the age-groups for the comprehension and narration raw score and the total score (Table 3). We notice

that the scores trend to increase according to the participants' age. With regard to the classification of the individuals' Narrative Language Ability Index (NLAI), we have verified that out of 56 assessed children, 40 (71.43%) showed an average classification, 11 (19.64%) an above average and five children (8.93%) showed a superior one.
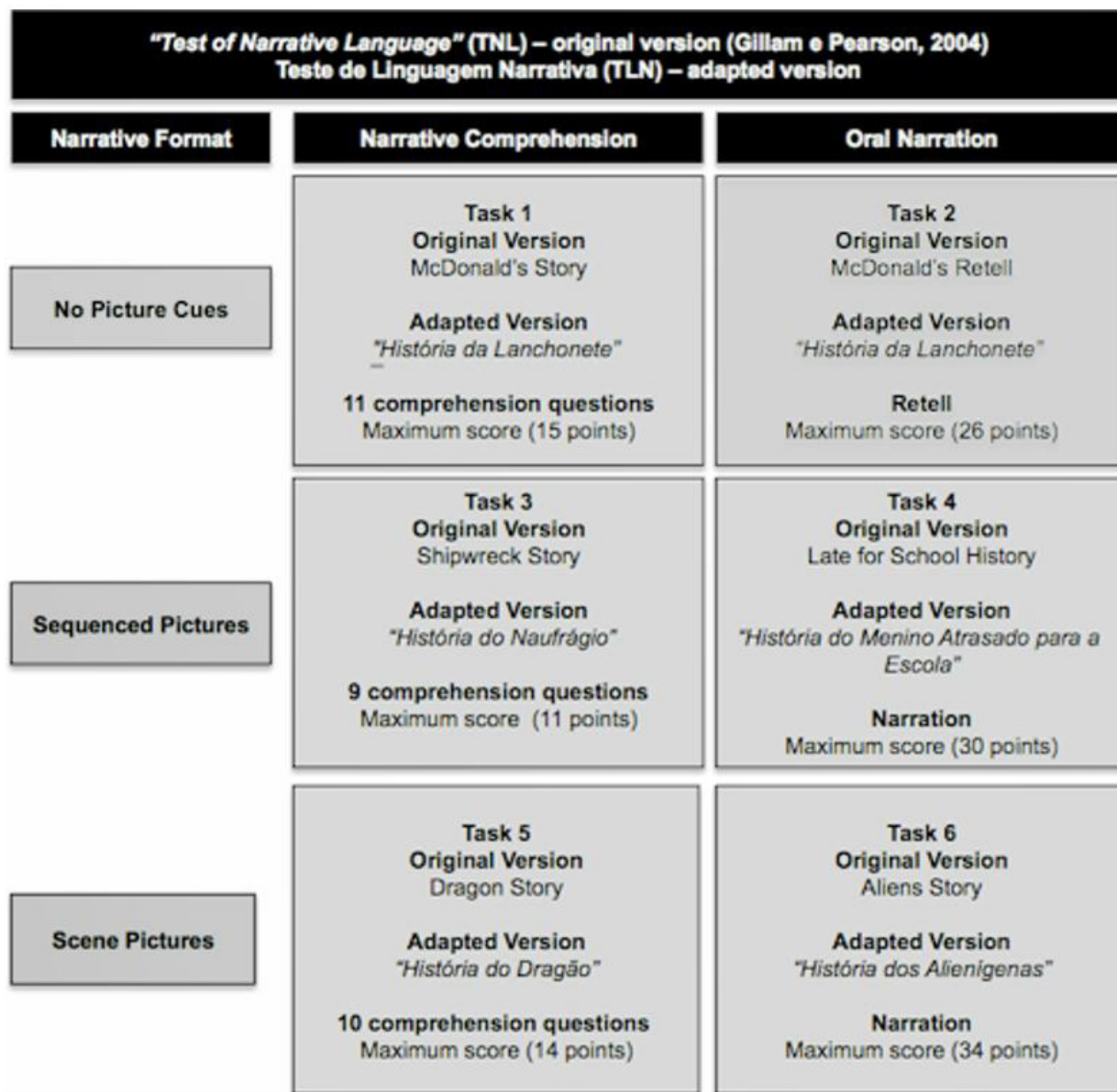


**Figure 2.** Schematic representation with maximum score for each task of the Test of Narrative Language (original and adapted versions)

**Table 3.** Raw Score (comprehension, narration and total) of children the pilot study, according to the Test of Narrative Language age-group

| Age-group | Raw Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Comprehension | | | | Narration | | | | Total | | | |
| | M | Md | SD | p | M | Md | SD | p | M | Md | SD | p |
| 5 | 22.5 | 22.5 | 1.4 | | 28.0 | 28.0 | 0.9 | | 50.5 | 51.0 | 1.9 | |
| 6 | 26.8 | 27.0 | 1.0 | | 38.0 | 39.0 | 4.3 | | 64.8 | 66.0 | 3.9 | |
| 7 | 32.2 | 32.5 | 3.0 | | 42.6 | 40.0 | 7.7 | | 74.8 | 72.5 | 10.0 | |
| 8 | 32.0 | 33.5 | 1.5 | 0.000 | 50.2 | 49.0 | 6.3 | 0.000 | 82.2 | 82.5 | 6.7 | 0.000 |
| 9 | 34.7 | 34.0 | 1.7 | | 51.2 | 51.0 | 2.8 | | 85.9 | 85.0 | 3.3 | |
| 10 | 34.5 | 35.0 | 1.9 | | 55.4 | 54.5 | 3.9 | | 89.9 | 89.5 | 4.9 | |
| 11 | 35.6 | 35.5 | 1.6 | | 61.2 | 59.5 | 6.1 | | 96.8 | 95.0 | 6.5 | |

**Caption:** Statistical test, Kruskal-Wallis test p≤0.05; M=Mean; Md=Median; SD=Standard Desviation

## DISCUSSION

In this study, we showed the outcomes of the cultural translation and adaption process of the Test of Narrative Language (TNL)[12] into Brazilian Portuguese.

The choice of translating and culturally adapting the TNL into Brazilian Portuguese is due to the fact that this instrument includes in its structure some of the main items considered the basics while proposing an investigation about the children's oral narration, both in the language typical or untypical development context, which will be discussed hereinafter.

The first item to be highlighted is the fact that the test construct enables access to both information – narrative comprehension and oral narration of the stories. The advantage of an instrument that measures receptive and expressive skills and that informs an individual score for such skills, as for the TNL, is that it tells the professional the existence of possible discrepancies among the language dimensions. It is known that some clinical pictures are marked by a discrepancy between receptive and expressive skills, e.g. Specific Language Disorder, so that an individual glance will be able to provide supplementary allowance for the diagnosis and intervention, although this glance must be balanced together with other formal and informal language assessment instruments for a more complete analysis of the case[12].

The second item to be mentioned about choosing the TNL refers to the possibility of accessing information which affects the cognitive and linguistic skills and which meet, respectively, the macro and micro structural dimensions of the narrative thereby giving support to the theoretical construct of the test.

The test includes access to the information from the main typical elements of the Story Grammar[21] (e.g., characters, scenery, complication, outcome and ending of the story) and it also subsidizes other quantitative proposals, however informal, in order to investigate the oral narration[8,11,22,23]. The most general organization of the narrative at macrostructural level comes from more general cognitive skills, of an executive nature[24], including information related to consistency and logical and causal relation between events and actions developed by the characters, which are contemplated at the TNL scoring system.

The information which meet the microstructural dimension of the narrative at the TNL are focused on internal linguistic aspects of the narrative, mainly the syntactic and semantic ones, carrying information related to the grammatical structure of the terms, the vocabulary and the cohesive elements used by the children at the narration. Such elements are cited by the researchers in the area[8,9,22,25] as a fundamental part of the analysis criteria of language samples related to the linguistic aspects of the narrative.

Although it is possible and valid to establish specific cutouts about one of these dimensions (macrostructure or microstructure) or yet about one of the aspects that such dimensions embrace (e.g., lexical diversity at the microstructural dimension) for investigative purposes, the perspectives about the oral narrative evaluation about stories provided by the cognitive model of representation of the narrative scheme suggest that the macro and microstructure aspects should be analyzed, on the assumption that these parameters when combined are important to inform about the individual's narrative competence[3,25].

As a third item, one can highlight the fact that the TNL includes narrative samples like scripts and fiction, addressing the proposed suppositions by the hierarchical model of oral narrative sample collections proposed by Hughes and collaborators[1], except for not including spontaneous narrative samples. As mentioned before, the test also includes the range of the narrative format with and without picture and also the range of the use of sequenced and single picture. In general, the narration with pictures tend to show less complex structures with shorter terms while compared to no picture narrations, suggesting the need of including different elicitation contexts as part of the procedures to investigate the narrative performance[26].

Finally as a fourth and last item, we can highlight the age-group of the test (5-0 and 11-11 years-months) that covers ages in which we can observe significant changes at the acquisition process of the narrative scheme of the story.

Within an expansionist perspective, studies have shown that at late five years old the children are able to dominate most of the structure of a story narrative, and when they are six they are already able to understand and narrate complete and well-structured stories[27]. However, this development follows expressively until they are twelve years old[12], in accord with the acquisition of more complex cognitive and linguistic skills, showing an expressive development at executive functions of lexical-syntactic field and logical-semantic relations[28].

Regarding the translation and adaption process of the TNL into Brazilian-Portuguese, we can say that the TNL is an instrument whose contend helps its process, since it does not use a lot of idiomatic expressions and the topic of the tasks are similar to our cultural reality, except for the "McDonald's" story. In the TNL original version the "McDonald's" story subsidies both tasks 1 and 2, "McDonald's Story" and "McDonald's Retell". The McDonald's fast-food restaurant chains are all over the world - even in Brazil. Nevertheless, in a country as big as Brazil which faces serious social problems, the daily access to this kind of restaurant is limited to a very specific part of the population. Consequently, in order to guarantee the experiential equivalence between the versions, we chose to replace the "McDonald's Story" by the "Snack Bar Story" in the adapted version of the test. Both stories have similar topics, making it possible to keep the semantic equivalence of the elements of analysis adapted to our culture (e.g., name of the characters, name of the sandwiches and beverages) so that the adapted story represented the common context of snack bars in our local culture context.

At the pilot study, the checking of this information within the target population of the test – which is recommended as part of the experiential equivalence assessment[19] – showed that McDonald's was not part of the daily routine of most children who participated in the study, although many children said they knew the name of this fast food restaurant. In contrast, most

of them (78.58%) said they had already eaten at a non-specific snack bar.

Although some children also said they had never had a meal at a snack bar, this topic showed it was more suitable to these children's cultural context, since when the examiner asked them they were able to mention at least one family member who had been to a snack bar or to a snack bar close to their homes, and they were able to mention some kinds of food and beverages that are sold in this place. (e.g., "I do not. My cousin Guilherme always goes. He likes hot dogs" or "On Saturdays my dad picks up some sandwiches so we can to eat at home."). On the other hand, although some children mentioned they knew "McDonald's" even if they had never been there, we could not observe many specific references about the name of the sandwiches that are sold there, except for the name of most common soda and juice that are popularly known.

It is worth remembering that the pilot study was made with some public school students with most of them belonging to the economic classification C1 (n=27; 48.21%) and C2 (n=17, 30.35%) according to "Critério de Classificação Econômica Brasil"[20] (Table 1). According to data released in 2015, C1, C2 and D-E classes represent 22.9%, 24.6% and 26.6% of Brazil's population respectively, according to the "Critério de Classificação Econômica Brasil"[20] which all together represent 74.1% of the Brazilian population.

It is known that a child's world knowledge performs an important influence at the narrative performance, as such topic can benefit or not the performance at the same task of story narrative[12]. It is also well-established in the books that the frequency and familiarity to semantic representations help the access to the meaning through the language comprehension system, which is measured by the long-term memory – that is responsible for the storage of words that will be accessed after the event[29]; in this case, it could have a certain advantage the children who have a daily access to a specific snack bar as the tasks 1 and 2 scoring system takes into account the reminder of specific information told in the story, as for the name of the snack bar and the types of sandwiches and beverages asked by the characters.

The concern about the use of the standard language was another key factor while adapting the TNL to Brazilian Portuguese. The choice of using tense structures which meet the colloquial language had the goal of helping the younger children and those in a different social context to better comprehend as well as bring the language of the test closer to the linguistic style used at colloquial language, since such instrument is from oral narration.

In relation to the operational issues of the test, we checked at the pilot study that it was an easy test to apply and that the adapted items (instructions and tasks) were understood by the children. As mentioned in the outcomes, after applying the pre-final TNL-BP adapted version, we made final adjustments to the test. These adjustments were necessary in order to refine the adaptions that were made and aiming the semantic equivalence

(vocabulary and grammar), also considering the information brought from the target population performance in the test.

The significant statistical differences found while comparing the age-groups (comprehension, narration and total raw score) and the distribution of these scores according to the age (Table 3) showed that the older children achieved more correct answers than the younger ones. However, this analysis will be in-depth at posterior studies underway the adapted version of the test, in order to identify whether these differences are occurring in all age-groups. This is desirable as such differences represent the different narrative language development phase in which children at different ages meet at the test application day, which suggest it is occurring for the pilot study sample.

The descriptive classifications indicated by the study children were close to the expected classification for the North-American population. This discovery provides clues that the assessed children's performance was similar to the North-American children. Therefore, these data have to be interpreted with caution, as such comparisons were used in this study for only exploratory purposes of the equivalence measurement between the versions, and it does not suggest Brazil's population normative data. The equivalence measurement will be able to show whether there will be or not the need of adapting these scores to the Brazilian sample.

## CONCLUSION

A translation and adaption of the TNL to Brazilian Portuguese was shown in this study. Adjustments were necessary in order to meet the semantic and experiential equivalence of the target population, regarding Brazil's social, linguistic and cultural context. The final and adapted version showed a conceptual, semantic and operational equivalence to the TNL original version. The results we have reported meet the starting steps which are considered fundamental for the cultural adaption of formal instruments, and which was made until the pilot study stage. The posterior stages – that meet the measurement equivalence for the validation and standardization of the test - are underway and might complement the results of this study.

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## Author contributions

*NFR and CMG were responsible for the study conception and design as well as for requesting the authorization to use the instrument and writing the article; NFR was also responsible for data acquisition and analysis; RBG was responsible for adaptation process, discussion of data and writing the article; TAL was responsible for adaptation process and writing the article.*