

# Involving Children in in the Cross-Cultural Adaptation Process of an Accessible Language Comprehension Assessment Instrument

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## Background

- Cerebral Palsy (CP) is the leading cause of childhood onset physical disability, affecting approximately 1 in 500 babies. Communication impairments are common, and approximately 1/5 children with CP cannot speak<sup>1</sup>. This does not mean they don't understand language. Existing language tests require verbal or fine motor responses.
- The Computer Based Instrument for Low Motor Language Testing<sup>2</sup> (C-BiLLT) is the first accessible test of language comprehension. Participants can use a variety of access methods to respond to the items.
- Originally developed in Dutch, our international research group is in the process of cross-culturally adapting the C-BiLLT into for use in English speaking Canadian children, using these four steps:
  1. Forward translation Dutch - English
  2. Analysis of content and equivalence of the translated items by individual experts and in group meeting
  3. Pilot test of the face validity with Canadian children
  4. Validation and feasibility study



Figure 1. a two-year old boy with CP completing the C-BiLLT using two buttons

## Aims of step 3

- To assess the cultural acceptability of the Canadian-English C-BiLLT items for Canadian children
- To assess the linguistic validity of the Canadian-English C-BiLLT items for Canadian children

## Methods

**Participants:** A convenience sample of 9 children, ages 4 to 8.5 years, typically developing (n=6) or with a diagnosis of CP (GMFCS I-III, verbal).

**Procedure:** Together with the test facilitator, participants reviewed the 86 C-BiLLT items. They were invited to share feedback on the wording, the image and the concept of all items, using an elicitation protocol.

**Analysis:** Children's responses were thematically organised using the template analysis technique<sup>3</sup>. A priori expected themes were *confusion, dislike, unfamiliarity and suggestion*, related to the concept, wording and/or image.

## Items under review

Table 1. Examples of items that needed adjustments

		Rationale
 Where is the mailbox?	 Where is the gift?	Modernization
 Chocolate sprinkles	 Pancakes	Cultural eating habits
 Cheese	 Toast	Cultural eating habits
 Walking the dog	 Going to walk the dog	Conceptual

## Results: Unforeseen Issues

The participants identified some problematic items that we had not anticipated.

### Conceptual



Figure 2. Original item 59: Who used to play outside, but doesn't anymore?

Some participants were confused by this item. "Anyone could not want to go outside", one of them argued. We changed the item to *Who wants to play outside, but now has to go to work?* In the Netherlands, 'playing outside' is a typical children's activity, hence Dutch children likely select the Mom as the answer.

### Linguistic



Figure 3. Original item 68: A small jar of jam is next to the red jar of jam.

Some participants felt 'next to' was also depicted in the bottom left picture. We changed the item to: *A small jar of jam is beside the red jar of jam.*

## Conclusion

- 12 out of the 86 items of the C-BiLLT needed additional adaptation:

- 4 conceptual changes
- 4 changes in wording
- 5 image changes

- We learned that young participants can provide great feedback and suggestions.
- Younger participants generally had more trouble expressing their opinions and their reasoning behind it.

## Next Steps

### Validation Study

60-80 typically developing children (ages 1.5 – 8.5 years) from daycares and elementary schools in the Hamilton area will complete the C-BiLLT. They will also complete standardized, validated language comprehension tests for *concurrent* validity and a measure of non-verbal intelligence for *discriminant* validity.

### Feasibility Study

20 children with CP (ages 1.5 – 12 years) with Cerebral palsy (GMFCS IV or V, severe speech impairment) will complete the C-BiLLT and, if possible, a standardized, validated vocabulary instrument. The child's family and members of the rehabilitation team will be consulted to find the optimal response method for the child.

## Acknowledgements



Figure 4. The certificate children received after completion

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## References

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