Assessing Children’s Development of American Sign Language

Charlotte Enns
Faculty of Education

CSSE
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Presentation Focus:

• American Sign Language Receptive Skills Test (ASL-RST)
• American Sign Language Production Test (ASL-PT)

• Both adapted from the British Sign Language (BSL) versions of the test
Acknowledgements

- **Research Collaborator** - Patrick Boudreault, Gallaudet University
- **Research Assistants** – Kyra Zimmer, Sarah Rabu, Cheryl Broszeit
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- **Artist** – Jessica Evans
- **SSHRC Funding**
- **All the children, families, and schools that participated**

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Purpose of Assessment

• To guide instruction/teaching
• To monitor progress/learning
• To provide evidence for support/funding
• Various types for various purposes
  – Formal/informal
  – Authentic/performance
  – Standardized
Language Assessment

• Receptive vs. Expressive Language
• Acquisition vs. Later Learning
• Components of Language:
  – Vocabulary
  – Grammar
  – Discourse
  – Pragmatics
Need for ASL Assessment Measures

• To monitor the success of bilingual deaf education programs
• To determine progress of children acquiring signed language
• Few commercially available assessment measures exist (Singleton & Supalla, 2010)
• Teachers often rely on informal descriptive measures to develop teaching goals and monitor progress
Test Adaptation vs. Test Development

- BSL Receptive Skills Test was the first standardized test of any signed language in the world
- Established validity and reliability
- Important considerations and decisions have been evaluated:
  - Grammatical features identified as indicators of proficiency (verb morphology and use of space)
  - Guidelines for test format validated (pictures, length, video)
  - Composition of normative sample

May 2014
BSL: Receptive Skills Test

- Typical receptive language task – child views video recording of signed phrase/sentence and selects appropriate picture from a choice of 3 or 4
- Assesses children aged 3 - 12 years (raw score converts to standard score)
- Includes vocabulary check, 3 practice items, and 40 test items
- Tests 6 grammatical categories: spatial verb morphology, number/distribution, negation, size/shape specifiers, noun/verb distinctions, handling classifiers
Test Adaptation

1. Consultation with ASL linguists and ASL native signers to determine suitability and revisions needed for each test item and need for developing new test items.

2. Development of new test items.

3. Re-drawing of test images to reflect new items and revise culturally inappropriate images.

4. Recording of a new test tape/DVD in ASL.
Test Adaptation (continued):

5. Pilot Testing – with native signing children aged 3 – 13 years

6. Data Analysis – revise (pictures, video, both), add, re-order test items according to pilot testing results

7. Normative Testing – test a larger number of children at each age level to determine norms for test performance

* Steps 5 & 6 were repeated – two rounds of pilot testing were required to finalize the adapted test
Finalized ASL Receptive Skills Test:

• Format - child watches video recorded ASL sentences and selects picture to match (from choice of 4), but picture responses inserted into video

• Includes vocabulary check, 3 practice items, and 42 test items

• Tests 8 grammatical categories: number/distribution, negation, noun/verb, spatial verbs (location and action), size/shape specifiers, handling classifiers, role shift, conditionals
Purpose of Vocabulary Check

• Ensures that the child knows the vocabulary (signs) used in the Receptive Skills Test
• When the child responds incorrectly we can assume it is because s/he doesn’t understand the grammar structure
• Vocabulary selected to be familiar to young children and have limited regional variations
ASL Grammatical Structures in the Test

1. **Number/distribution** – the number of objects/people and their spatial arrangements are depicted through signs, classifiers, and repetition of movements (for example, three cups on a table, can be depicted by signing CUP three times but in the location of each cup, either in a row or randomly around the table).

2. **Negation** – negatives are expressed in several different ways in ASL, including a head shake together with signs, using specific negative signs (for example NOT, NEVER, NOTHING), and with some verbs the negative is indicated with a change in the movement to the opposite direction (for example, LIKE, WANT, KNOW).

3. **Noun/verb Distinction** - similar signs are made with different movements to distinguish an object from an action (for example, single movement/hold for SIT vs. small repeated movement for CHAIR).
4. **Spatial Verbs (Location and Action)** – spatial verbs are used to express relationships between and among objects and people, and can range from simple to very complex constructions. These structures typically involve the use of classifiers, and can primarily depict location (for example, a car behind a house), or primarily an action (for example, a bicycle going over a hill), or a combination of both location and action (for example, a cat climbing up a tree and then jumping onto the roof of a car).

5. **Size & Shape Specifiers** – signs and classifiers are modified to show the attributes of nouns - people and objects (for example, using spread fingers moving downward on the body to indicate a thinly striped shirt).

6. **Handling Classifiers** – signs where the handshape represents how objects (nouns) are held (for example, eating a sandwich vs. eating an apple).
More Complex ASL Structures Added

7. **Role Shift** - the signer embodies the characters of a story and marks the change in dialogue or perspective from one character to another through various devices, including shoulder shift and eye gaze (for example, depicting the mother giving the apple and shifting to the child accepting the apple).

8. **Conditional Sentences** - the use of raised eyebrows and the ASL sign SUPPOSE or IF to mark the first clause and to indicate that the event/clause that follows is dependent on the first (for example; IF RAIN, GAME CANCEL).
Standardization Process

- Normative data collected from various sources to gain a larger sample:
  - EELS Data (n = 81)
  - Individual Researchers (n = 15)
  - Research Team Testing at various sites in the USA (n = 107)
Table 3. Standardization Participants

<table>
<thead>
<tr>
<th>Age</th>
<th>Combined</th>
<th>Native</th>
<th>Non-Native</th>
<th>Males</th>
<th>Females</th>
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<td>10</td>
<td>6</td>
<td>4</td>
<td>8</td>
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<td>Total</td>
<td>203</td>
<td>77</td>
<td>126</td>
<td>97</td>
<td>106</td>
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# Standardization Results

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<th>Age</th>
<th>Score Mean</th>
<th>Score Range</th>
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<td>1-12</td>
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<td>4</td>
<td>8.71</td>
<td>1-26</td>
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<td>5</td>
<td>13.78</td>
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<tr>
<td>11</td>
<td>31.25</td>
<td>26-36</td>
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</table>
Vocabulary Check

• Requires set of 20 vocabulary cards
• Does not need to be administered if the tester is sure that the child knows all the signs used in the ASL RST
• Takes 5 minutes to administer
• Child names the cards
• Tester may provide some prompts
Receptive Skills Test

• Requires Test DVD (and computer)
• Takes between 10 – 20 minutes to administer depending on age and ability of child
• Begins with instructions, but these may need to be repeated live for some children
• **Practice items**
  – Tester may provide feedback or repeat (live or video) if child responds incorrectly to these three items to help them understand the test task
  – Do not continue with the test if the child gets all the practice items wrong or is not able to follow test procedures
ASL RST – Scoring the Test

• Background information on the front page of Score Sheet – includes identification, ASL exposure, child’s attention, presence of disabilities, and other observations

• Number of correct responses determines the child’s raw score which is converted to a standard score

• A qualitative error analysis can also be completed to describe the pattern of errors made in relation to grammatical structures
Available at: www.northernsignsresearch.com
Cost - $230.00 (plus shipping)

American Sign Language:
Receptive Skills Test
BSL Production Test

- ~3 minute language-less video “The Spider Story”

- Narrate the story – evaluating:
  - Narrative content
  - Narrative structure
  - Grammar production
  - 3 questions (comprehension)
  - Evidence of role shift
ASL Production Test

• Objective to create 3 scenarios
  – Same grammar elicitation
  – Allow re-testing longitudinally
  – Development challenges
  – Filming American version
  – Simpler to focus on grammatical elicitation
ASL Grammar Alignment

- **Spider**
  - 12 Spatial Verbs
  - 5 Agreement Verbs
  - 5 Aspect
  - 5 Manner
  - Role shift (2 characters)

- **Home Alone**
  - 12 Spatial Verbs
  - 5 Agreement Verbs
  - 5 Aspect
  - 5 Manner
  - Role shift (2 characters)

- **Tiffany’s Breakfast**
  - 12 Spatial Verbs
  - 5 Agreement Verbs
  - 5 Aspect
  - 5 Manner
  - Role shift (2 characters)
Object Parallel

<table>
<thead>
<tr>
<th>Spider Story</th>
<th>Home Alone</th>
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<tbody>
<tr>
<td>• TRAY</td>
<td>• STACK-COMIC</td>
</tr>
<tr>
<td>• JUG</td>
<td>• MILK-CARTON</td>
</tr>
<tr>
<td>• CUP</td>
<td>• CUP</td>
</tr>
<tr>
<td>• CANDY</td>
<td>• GUM</td>
</tr>
<tr>
<td>• CUPCAKE</td>
<td>• COOKIE</td>
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<tr>
<td>• SANDWICH</td>
<td>• COMIC</td>
</tr>
<tr>
<td>• SPIDER</td>
<td>• GAME CONTROLLER</td>
</tr>
<tr>
<td></td>
<td>• REMOTE</td>
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</table>
# Verb Parallel

## Spider Story
- BRING/CARRY
- WALK/GO-TO (TIP-TOE)
- PICK-UP
- UNWRAP
- HOLD
- CARRY
- HOLD
- TAKE-OUT-FROM-MOUTH
- CHASE-AROUND
- WATCH
- DEMAND
- GIVE/HAND-OVER
- SEE
- EAT
- DRINK
- CHEW
- PLACE

## Home Alone
- BRING/CARRY
- WALK/GO-TO (TIP-TOE)
- PULL-OUT
- UNWRAP
- HOLD
- CARRY
- HOLD
- TAKE-OUT-FROM-MOUTH
- CHASE-AROUND
- WATCH
- DEMAND
- GIVE/HAND-OVER
- SEE
- EAT
- DRINK
- CHEW
- PLACE
Revisions and process

- **Characters** – gender, age, diversity, role
- **Timeless settings** – furniture, neutral colors
- **Clean visuals** – no distractions; focus on eliciting target grammar structures
- **Videography** – widescreen HD, improved camera angles and shots, shorter and faster sequences (from 3½ minutes to 2½ - 3 minutes)
- **Logistics** – location, casting, crew
The Filming Experience!
Updated Example:

http://vimeo.com/90711110
Future Research

- **Pilot testing** of all 3 scenarios with Deaf adults
- **Pilot testing** on a sample of typically developing native signers between ages 4 – 12 years
- **Analysis** of pilot testing and revise if necessary
- **Development** of an effective and practical scoring system
- **Standardization** on a larger sample to develop norms by age.
References


Contact: Charlotte Enns - charlotte.enns@umanitoba.ca

Website: http://northernsignsresearch.com