Construct Validity of the AAC-Aphasia Framework: Partner Dependent and Independent Communicators

Kathryn L. Garrett
Ph.D., CCC-SLP

Joanne P. Lasker
Ph.D., CCC-SLP

Alix J. Cave
M.S., Ed.

Alternative Communication Therapies, Pittsburgh, PA
University of Buffalo (adjunct)

Florida State University, Tallahassee, FL
Impact of Severe Aphasia

- In the first few months (acute phase) of recovery from aphasia, severe communication impairment...
  - interferes with active rehabilitation
  - may affect discharge planning

- Throughout the chronic phase...
  - may never regain enough spoken language to communicate and participate effectively in ALL important daily activities
  - even if individuals receive ongoing restorative speech-language therapy
Variety of AAC Strategies

For these individuals, clinicians may consider incorporating the use of augmentative and alternative communication (AAC) strategies including:

- partner-assisted conversation techniques
- independently-initiated communication strategies
  - no voice output – book/board, gesture, drawing, writing
  - low tech – simple digitized devices
  - high tech – complex, dynamic display devices
AAC-Aphasia Categories
(Garrett & Lasker, 2005)
Partner Dependent Communicators

“Individuals who are consistently dependent on their conversational partners to manage informational demands and provide communication choices within highly familiar contexts.”

Independent Communicators

“[Individuals who] have enough cognitive and linguistic competence to converse independently.

...comprehend most of what is said to them even when little contextual support is available.

... can intentionally share their own ideas using a variety of strategies and modalities that they select themselves.”

Prior Research (Lasker & Garrett, 2006)

- Communicators were classified based on:
  - Scores on the *Multimodal Communication Screening Test for Persons with Aphasia* (MCST-A; Garrett & Lasker 2005)
  - Communication strategies that had been implemented and used successfully
  - Results of formal (impairment) testing
  - Checklist of communication behaviors (see aac.unl.edu)
Research Questions

Will AAC experts, experts in adult neurogenics, and masters students consistently classify communicators with aphasia as either partner-dependent or independent (according to the definitions used to create the AAC-Aphasia framework) when shown videotapes, written samples, and communication samples generated by people with aphasia?

What factors do raters use in making judgments about communicators with aphasia who have the potential to use AAC strategies?
Participants - Raters

- **Adult Neuro experts**: 6 speech-language pathologists with at least 5 years experience providing treatment in the area of adult neurogenics

- **AAC + Neuro experts**: 7 speech-language pathologists with at least 5 years experience providing treatment in AAC and adult neurogenics

- **SLP graduate students**: 25 students in their first year of a Master’s degree program, convenience sample at FSU
Participants with aphasia

- 6 people with aphasia (42 to 65 years old)
- Time post onset: 1 year – 9 years
- diagnosed with aphasia by...
  - neurologic examination
  - brain imaging
  - testing with a standardized test of aphasia (e.g., score of < 93.8 on the Western Aphasia Battery (Kertesz, 1982, 2008)
- Selection: from convenience sample of individuals familiar to the experimenters for whom complete data existed
The individuals were classified, a priori, into the categories of Partner Dependent and Independent by the investigators who served as the gold standard for this initial round of validation testing:

- 3 samples were partner dependent
- 3 samples were independent.

The investigators made a purposeful effort to select samples that represented a range of abilities within each of these categories.
Procedure

- Raters reviewed existing definitions of Partner Dependent and Independent communicators.
- Raters viewed the 6 randomly-ordered case studies that included the following information:
  - medical information related to diagnosis
  - standardized test scores
  - samples of client’s writing
  - videotapes of conversation (supported and unsupported)
  - specific subtests of the *Multimodal Communication Screening Test for People with Aphasia* (Garrett & Lasker, 2005)
  - AAC systems trials
Rating Process

- After reviewing both the definitions and case study materials, participants completed forms classifying communicators as either partner-dependent or independent.

- Rating revisions were allowed as the task progressed, and raters were also allowed to re-watch video segments as often as needed to make a valid judgment.
Agreement Across Groups

The bar graph shows the percentage agreement across different groups for Jan, Rod, Kelly, Max, Richard, and John. The categories are Students (blue), Adult Neuro Experts (brown), and AAC Experts (green). The y-axis represents the percent agreement, ranging from 0 to 100 percent. The x-axis lists the names of the groups.
“Why Did You Choose This Answer?”
Response Codes

- degree of cueing/support*
- how clients used/navigated on voice-output devices*
- use of unaided modalities* (e.g. gesture, writing, drawing)
- symbol use/formulation*
- responses vs. initiations*
- speech intelligibility
- physical status
- comprehension
- test results
- appropriateness or effectiveness of communication attempts
### Top Reasons for Category Decisions

<table>
<thead>
<tr>
<th>Frequency (most-to-least)</th>
<th>Adult Neuro Experts</th>
<th>AAC Experts</th>
<th>SLP Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cueing/Support</td>
<td>Cueing/Support</td>
<td>Cueing/Support</td>
</tr>
<tr>
<td>2</td>
<td>Device Use/Navigation</td>
<td>Use of Unaided Modalities</td>
<td>Appropriateness/Effectiveness</td>
</tr>
<tr>
<td>3</td>
<td>Responses/Initiation</td>
<td>Device Use/Navigation</td>
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<tr>
<td>4</td>
<td>Use of Unaided Modalities</td>
<td>Responses vs. Initiation</td>
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<tr>
<td>5</td>
<td>Symbol Use/Formulation</td>
<td>Symbol Use/Formulation</td>
<td>Speech Intelligibility</td>
</tr>
<tr>
<td>6</td>
<td>Comprehension Skills</td>
<td>Comprehension Skills</td>
<td>Test Performance</td>
</tr>
</tbody>
</table>
Sample Comments for Communicators Classified as *Independent*

- “She was able to select what to say for herself and communicate it.”
- “Combination of verbal speech, gestures, and writing but can communicate without a partner.”
- “Was able to communicate ideas using AAC devices.”
- “She seems to understand everything pretty well. I think she would do well, especially aided by an AAC device, on her own.”
- “She can use symbols to express her meaning and intention.”
- “Scored high on Aphasia Quotient, able to communicate with some fillers, needed minimal prompting, receptive stronger than expressive skills.”
Sample Comments for Communicators
Classified as *Partner-Dependent*

- “He needed prompting from the clinician every step of the way.”
- “He didn't select his own statements or expound on options that were given to him.”
- “Although he communicated some information, most of it was generated by his partner and he either confirmed or rejected information.”
- “He is able to use his AAC device to participate in conversation, but he is not able to elaborate on anything beyond what the device says - partner is asking questions to elaborate on topic, but he just keeps pushing same button.”
- “All communication is unintelligible. Couldn't use basic device without guidance.”
Comments on Kelly (outlier)

- “I marked her as independent because I think she will be that way with specific strategies and technologies (PD).“
- “I wish we were allowed to pick what type of communicator (transitional--teetering on independent) (l).
- “I feel she is a stored message communicator if able to access symbols that limit her reading comprehension needs (l).”
- “She seems a bit more borderline - able to do some communicating on her own, but overall, I would say she needs support (PD).“
Independent Communicators

Device Use/Navigation

Physical Status

Cueing/Support

Speech

Appropriateness/Effectiveness

Test Results

Response vs. Initiation

Symbols/Formulation

Modality Use

Comprehension

Garrett/Lasker Validation ASHA 2010
Partner Dependent Communicators

Cueing/Support

Physical Status

Test Results

Symbols/Formulation

Comprehension

Modality Use

Device Use/Navigation

Response vs. Initiation

Speech

Max
Richard
John

Garrett/Lasker Validation ASHA 2010
So, are the constructs valid?

- With a modicum of training, all groups able to make “accurate” judgments on 5 of 6 of communicators presented.

- Agreement was good for five of the six communicators profiled.
  - problems with Kelly
    - related to definition of “independent”
    - video clips selected
    - relatively new to AAC strategies

- Factors that raters used to make a decision about partner dependent vs. independent were relatively consistent
Future Plans

- Follow up with more systematically-constructed video samples
  - single partner
  - more rigorously controlled tasks across communicators
- Explore validation for smaller categories within the broad tiers of the framework
- Correlate aphasia-AAC classifications with scores on impairment and functional measures
- Correlate classifications with practice decisions and treatment goals
Thanks and acknowledgement

- To the participants with aphasia and their family members
- To the raters who donated their time to participate in this study
- To Alix Cave for formatting the study materials and video