What is AphasiaBank?

AphasiaBank is an archival database that collects and analyzes samples of the discourse of individuals with aphasia and normal participants across a range of tasks.

The Major Goal of AphasiaBank

To assemble a large repository of video-recorded discourse samples, transcribed in a format that facilitates extensive computerized language analyses.

To make it available for use by authorized researchers to answer a variety of questions about aphasic language.

The database as of February 2012

<table>
<thead>
<tr>
<th>Non-aphasic adults (n=157)</th>
<th>Aphasic adults (n=194)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: mean = 65.9 years, range = 23.0-89.5</td>
<td>Age: mean = 61.6 years, range = 30.3-90.7</td>
</tr>
<tr>
<td>Gender: 81 F, 76 M</td>
<td>Gender: 73 F, 118 M</td>
</tr>
<tr>
<td>Handedness: 142 R, 10 L, 5 A</td>
<td>Handedness: 166 R, 13 L, 5 A (5 unavailable)</td>
</tr>
<tr>
<td>Education: mean = 15.3 years, range = 10-22</td>
<td>Education: mean = 15.5 years, range = 10-25</td>
</tr>
<tr>
<td>WAB aphasia types</td>
<td></td>
</tr>
<tr>
<td>Anomic: 61</td>
<td>Anomic: 51</td>
</tr>
<tr>
<td>Broca: 51</td>
<td>Broca: 54</td>
</tr>
<tr>
<td>Conduction: 34</td>
<td>Conduction: 24</td>
</tr>
<tr>
<td>“Not aphasic”: 10</td>
<td>“Not aphasic”: 16</td>
</tr>
<tr>
<td>Wernicke: 16</td>
<td>Wernicke: 6</td>
</tr>
<tr>
<td>TCM: 6</td>
<td>TCM: 4</td>
</tr>
<tr>
<td>Global: 4</td>
<td>Global: 3</td>
</tr>
<tr>
<td>TCS: 2</td>
<td>TCS: 1</td>
</tr>
<tr>
<td>Unavailable: 1</td>
<td>Unavailable:</td>
</tr>
</tbody>
</table>

Protocol

1. Systematic demographic information (approximately 50 fields)
   - date of birth
   - age at testing
   - gender
   - race
   - handedness
   - adequate vision and hearing
   - education
   - occupation and employment status
   - birth country
   - years in US
   - language status
   - aphasia etiology
   - aphasia duration
   - apraxia of speech
   - dysarthria
   - depression
   - years of SLP treatment
   - neurological/medical info
   - and more .......

An important secondary goal....

AphasiaBank is already a rich teaching resource via its archived videotapes and accompanying transcripts.
Protocol, cont.

2. Tests administered

- Western Aphasia Battery-Revised (2007)
  Aphasia Quotient subtests only
- Short Boston Naming Test (2001)
- Verb Naming Test
  (from Northwestern Assessment of Verbs and Sentences - Revised)
- AphasiaBank Repetition Test (2007)
  closed word list, increasing length
  open word list, increasing length
  sentences, increasing length
  sentences -- no errors, semantic errors, interference effect

Protocol, cont.

3. Discourse tasks -- scripted

Free speech

- Stroke Story
  "Do you remember when you had your stroke? Please tell me about it."
- Recovery
  "Tell me about your recovery. What kinds of things have you done to try to get better since your stroke?"
- Important personal event
  "Thinking back, can you tell me a story about something important that happened to you in your life? It could be happy or sad or from any time -- from when you were a kid or more recently."

Protocol, cont.

4. Picture descriptions

- Broken window

Protocol, Picture descriptions, cont.

- Refused umbrella

Protocol, Picture descriptions, cont.

- Cat in the tree

Discourse Tasks, cont.

- Cinderella narrative

PB&J -- procedural discourse
Demographic data are on a master spreadsheet on the website.

Test results are also on a master spreadsheet on the website.

Videotapes are in a password protected media database on the website.

Discourse samples are transcribed using CLAN and placed in a password protected transcript database on the website.

talkbank.org/AphasiaBank

Selected research studies using the AphasiaBank database

1. Automated analyses of the Cinderella story (MacWhinney et al., 2010)
   - total number of words and total number of unique words
   - investigate differences between males and females
   - investigate differences between aphasia and control participants
   - compare top 10 most frequent nouns and verbs
   - compare lexical diversity
   - conduct error analyses at word and sentence level
   - investigate aphasia group’s production of collocations like “glass slipper”, “happily ever after”, “fairy godmother”
   - conduct gesture analysis
   - compare sample durations, utterance duration, pause durations

Selected research studies using the AphasiaBank database, cont.

1. Better but no cigar: Persons with aphasia speak about their speech (Fromm et al., 2011)
   - examine participants’ responses to the question, “How do you think your speech is these days?”
   - determine if the responses valence (positive, neutral/mixed, negative) differed on the basis of time post-onset, aphasia type, or aphasia severity

Research thoughts ....

REALLY develop a “normal speaker” template across protocol discourse tasks.

Compare aphasic performances against the lexicon(s).

Use this to develop an objective metric for severity, or even a classification system.

Catalog and compare answers to free speech questions.

Develop data-based definitions for categorizing aphasic speech errors.

Compare performance across time.

Investigate bilingual discourse performance.

AND many, many more........

DementiaBank Protocol (in preparation)

1. Demographic data collection
2. Tests
   - Boston Naming Test (short form)
   - Verbal Naming Test (from Northwestern)
   - Famous People (Holland)
   - Montreal Cognitive Assessment (Nasreddine et al.)
   - Common Objects Memory Test (Kempler)
   - A Quick Test of Cognitive Speed (Wiig)
   - AphasiaBank Repetition Test (MacWhinney, Holland, et al.)
3. Discourse Protocol

TalkBank/DementiaBank

Pitt corpus

556 audio taped Cookie Theft descriptions from NIA studies at the University of Pittsburgh (1983, 1985)

314 dementia samples

242 control samples

transcriptions by Ohio State SLP student volunteers

checked and coded for errors at CMU AphasiaBank lab
<table>
<thead>
<tr>
<th>Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frenchay Dysarthria Assessment</td>
</tr>
<tr>
<td>Functional Assessment of Verbal Reasoning &amp; Executive Functioning</td>
</tr>
<tr>
<td>Digit Span and Symbol Digit Modalities Test</td>
</tr>
<tr>
<td>Similarities</td>
</tr>
<tr>
<td>Zoo Map</td>
</tr>
<tr>
<td>Verbal Fluency</td>
</tr>
<tr>
<td>Stroop</td>
</tr>
<tr>
<td>Hopkins Verbal Learning Test</td>
</tr>
<tr>
<td>Brief Visual Memory Test</td>
</tr>
<tr>
<td>Verb Naming (from Northeastern)</td>
</tr>
<tr>
<td>Boston Naming Test (2nd ed.) Short form</td>
</tr>
<tr>
<td>Western Aphasia Battery—Revised — Aphasia Quotient</td>
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<tr>
<td>Modified Kagan rating scale</td>
</tr>
<tr>
<td>Sydney Psychosocial Reintegration Scale</td>
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</tbody>
</table>

Discourse Protocol: same as AphasiaBank