Temple Assessment of Language and Short-Term Memory in Aphasia (TALSA)

Rationale and Descriptions of Tests

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Part 1

- Semantic and phonological word processing tasks
- Tasks vary in difficulty (*sensitive to milder impairments*)
- Tasks vary in short-term memory load
  - Psycholinguistic difficulty (e.g. concrete versus abstract words)
  - Interval between stimulus and response or between 2 items to be recalled
  - Number of items held in STM
TALSA: Interval Variation

• 1 second unfilled (silent)

• 5 seconds unfilled (silent)

• 5 seconds filled (participant names numbers on a computer screen)

TALSA Part 1: Input Phonological Processing Measures

Phoneme Discrimination

• 1-2 syllable word and nonword pairs

• Pairs differ by 1-2 phonemes at initial, medial, or final phoneme positions

• Time interval between stimuli varies (1s, 5s unfilled, or 5s filled)

• Participant decides whether two auditorily presented items rhyme

Rhyme Judgments

• 1-2 syllable word and nonword pairs

• Time interval between stimuli varies (1s, 5s unfilled, or 5s filled)

• Participant decides whether two auditorily presented items rhyme
TALSA Part 1: Input Phonological Processing Measures

Phoneme Discrimination

1 second interval example:

- 1-2 syllable word and nonword pairs
- Pairs differ by 1-2 phonemes at initial, medial, or final phoneme positions
- Time interval between stimuli varies (1s, 5s unfilled, or 5s filled)
- Participant decides whether two auditorily presented items rhyme

[Insert example video]

5 second unfilled interval example:

- 1-2 syllable word and nonword pairs
- Pairs differ by 1-2 phonemes at initial, medial, or final phoneme positions
- Time interval between stimuli varies (1s, 5s unfilled, or 5s filled)
- Participant decides whether two auditorily presented items rhyme

[Insert example video]
TALSA Part 1: Input Lexical-Semantic Processing Measures

Lexical Comprehension

• Spoken word to picture matching

• Participant chooses from 4 pictures in the same semantic category

• Time interval between word and picture presentation varies

Category Judgments

• Two words (simultaneous spoken and written presentation) or pictures presented in succession

• Participant decides whether the two words belong to same semantic category

• Time interval between the two words varies

1 second interval example:

[insert example video]
TALSA Part 1: Input Lexical-Semantic Processing Measures

**Lexical Comprehension**

- Spoken word to picture matching
- Participant chooses from 4 pictures in the same semantic category
- Time interval between word and picture presentation varies

*5 second interval example:*

[insert example video]

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Talsa Part 1: Output Processing

**Word and Nonword Repetition**

- Words and nonwords matched for length and syllable structure are repeated
- Interval between auditory word presentation and repetition is varied

**Picture Naming**

- 1-3 syllable picture names
- Picture presented for 2 seconds followed by cue to name (beep)
- Interval between picture and cue to name is varied
Talsa Part 1: Output Processing

[insert video example here]

**Picture Naming**
- 1-3 syllable picture names
- Picture presented for 2 seconds followed by cue to name (beep)
- Interval between picture and cue to name is varied

TALSA Part 1: Processing Multiple Word Utterances

**Word String repetition**
- Repetition of phonologically related, categorically related, and unrelated strings

**Sentence repetition**
- Repetition of simple declarative sentences and sentences “patted” with modifiers

**Sentence comprehension**
- Participant hears sentence and selects the matching picture from two pictures

_All tasks are presented in 3 different interval conditions_
### TALSA Part 1: Tasks that Vary Stimuli Number

#### Rhyming Triplet Judgments

- 1 syllable picturable nouns
- Pictures presented simultaneously with spoken names
- **Condition 1**: Decide which of 2 words rhyme with a target word
- **Condition 2**: Decide which 2 of 3 words rhyme

#### Synonymy Triplet Judgments

- Concrete and abstract nouns and verbs
- Spoken and written forms of 3 words simultaneously presented
- Conditions same as rhyming triplet task.

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*Condition 1 example (easier STM load):*

[insert example video]
TALSA Part 1: Tasks that Vary Stimuli Number

**Rhyming Triplet Judgments**

- 1 syllable picturable nouns
- Pictures presented simultaneously with spoken names
- Condition 1: Decide which of 2 words rhyme with a target word
- Condition 2: Decide which 2 of 3 words rhyme

*Condition 2 example (harder STM load): [insert example video]*

---

TALSA Part 1: Tasks that Vary Stimuli Number

*Condition 1 example (easier STM load)*

[insert example video]

**Synonymy Triplet Judgments**

- Concrete and abstract nouns and verbs
- Spoken and written forms of 3 words simultaneously presented
- Conditions same as rhyming triplet task.
TALSA Part 1: Tasks that Vary Stimuli Number

**Condition 2 example (harder STM load)**

(insert example video)

**Synonymy Triplet Judgments**

- Concrete and abstract nouns and verbs
- Spoken and written forms of 3 words simultaneously presented
- Conditions same as rhyming triplet task.

TALSA Part 2: Repetition span with psycholinguistic variations

<table>
<thead>
<tr>
<th>Digit and Word Spans</th>
<th>Participant repeats or points to pictures representing a sequence of auditorily presented digits or imagable, high frequency words</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 lists per string length (up to 7)</td>
</tr>
<tr>
<td>Repetition Span for words varied for frequency (F) and imageability (I)</td>
<td>Participant repeat word strings in for conditions: HF-HI, LF-HI, HF-LI, LF-LI</td>
</tr>
<tr>
<td></td>
<td>5 lists per string length (up to 6)</td>
</tr>
<tr>
<td>Word-Nonword Span</td>
<td>Participant repeats words and nonwords</td>
</tr>
<tr>
<td></td>
<td>Word span includes 10 lists of HI-HF words at 4 string lengths (2 to 5 words)</td>
</tr>
<tr>
<td></td>
<td>Nonword span includes stimuli derived from items in word span (2-3 phonemes altered)</td>
</tr>
</tbody>
</table>
TALSA Part 2: Probe Spans

- Participant hears word string followed by spoken probe word
- Participant judges whether probe is related to any of the words in the string

<table>
<thead>
<tr>
<th>STM Span</th>
<th>Judgment Type</th>
<th>String Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identity STM Span</strong></td>
<td>Judgments of sameness</td>
<td>12 total</td>
</tr>
<tr>
<td><strong>Semantic STM Span</strong></td>
<td>Judgments of semantic category</td>
<td>7 total</td>
</tr>
<tr>
<td><strong>Phonological STM Span</strong></td>
<td>Rhyme judgments</td>
<td>7 total</td>
</tr>
</tbody>
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<tbody>
<tr>
<td></td>
<td>[insert example video]</td>
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</tbody>
</table>

**Phonological STM Span**

Verbal STM: Assessment Take Home Points

- Language processing is rapid and fleeting

- The direct manipulation of STM load in language tasks allows for more ecologically valid measures

- Tests of phonological and semantic STM help determine an individual’s language impairment type