Maximizing Communication for Individuals with
Primary Progressive Aphasia

Keely McMahan, M.S., CCC-SLP
Pi Beta Phi Rehabilitation Institute

Vanderbilt Bill Wilkerson Center

Objectives

- Describe **speech and language characteristics** of PPA sub-types
    - Logopenic
    - Nonfluent/Agrammatic
    - Semantic

- Understand relationships between PPA sub-types and associated **underlying pathologies**
- Develop **functional, patient-centered goals** for individuals with progressive aphasia

Background

1890's: first described by psychiatrists Arnold Pick and Paul Sérieux:

> "a progressive disorder of language associated with atrophy of the frontal and temporal regions of the left hemisphere"

1975: Warrington described disorder of semantic memory

> - condition also described by Snowden et al. as "semantic dementia"

(Gorno-Tempini et al., 2011)

Background

1982: Mesulam described series of cases "slowly progressive aphasia"

1990's: Hodges et al. described comprehensive characterization of semantic dementia

1996: Grossman et al. identified a different progressive language disorder, termed "progressive nonfluent aphasia"

(Gorno-Tempini et al., 2011)

Coming to a Consensus

1998: Consensus meeting (Neary et al.)

- attempt to develop criteria for these conditions as they related to frontotemporal lobar degeneration (FTLD)

- broadly classified into "semantic dementia" or "progressive non-fluent aphasia" (fluent vs. non-fluent)
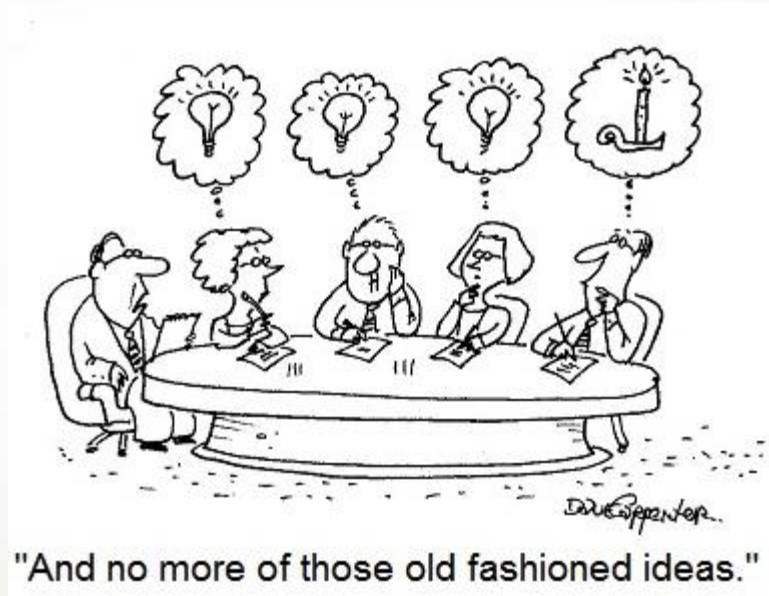
A third variant

2004: Gorno-Tempini et al.

- – a number of cases of PPA did not fit into binary classification

- – Described third variant

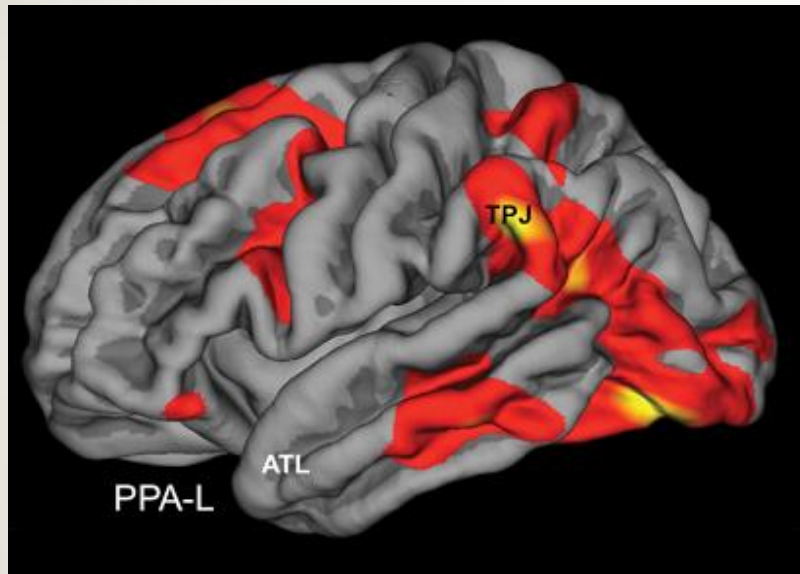 - • "logopenic progressive aphasia"

Latest Consensus

2011: Gorno-Tempini et al.

- Group of researchers in field of PPA convened to develop a consistent framework for classification of PPA

"And no more of those old fashioned ideas."

Logopenic Variant

Table 4   Diagnostic criteria for logopenic variant PPA

I. Clinical diagnosis of logopenic variant PPA

Both of the following core features must be present:

1. Impaired single-word retrieval in spontaneous speech and naming
2. Impaired repetition of sentences and phrases

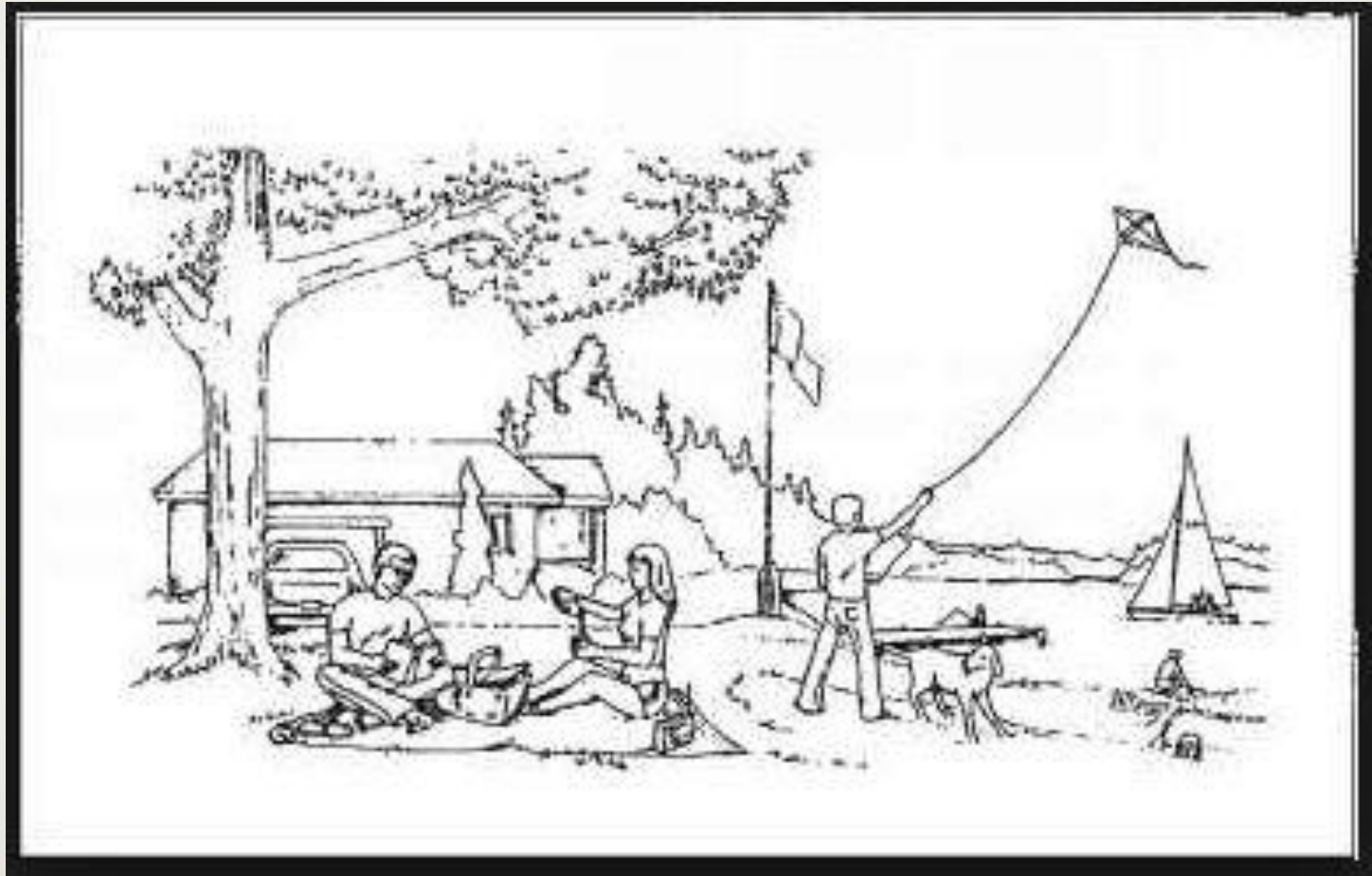At least 3 of the following other features must be present:

1. Speech (phonologic) errors in spontaneous speech and naming
2. Spared single-word comprehension and object knowledge
3. Spared motor speech
4. Absence of frank agrammatism

II. Imaging-supported logopenic variant diagnosis

Both criteria must be present:

1. Clinical diagnosis of logopenic variant PPA
2. Imaging must show at least one of the following results:
   a. Predominant left posterior perisylvian or parietal atrophy on MRI
   b. Predominant left posterior perisylvian or parietal hypoperfusion or hypometabolism on SPECT or PET

- Left posterior temporal and inferior parietal lobe involvement

- Most often associated AD pathology

(Gorno-Tempini et al, 2011)

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Logopenic Variant

Logopenic PPA.wav

Nonfluent/Agrammatic PPA

Table 2   Diagnostic features for the nonfluent/agrammatic variant PPA

I. Clinical diagnosis of nonfluent/agrammatic variant PPA

At least one of the following core features must be present:

1. Agrammatism in language production
2. Effortful, halting speech with inconsistent speech sound errors and distortions (apraxia of speech)

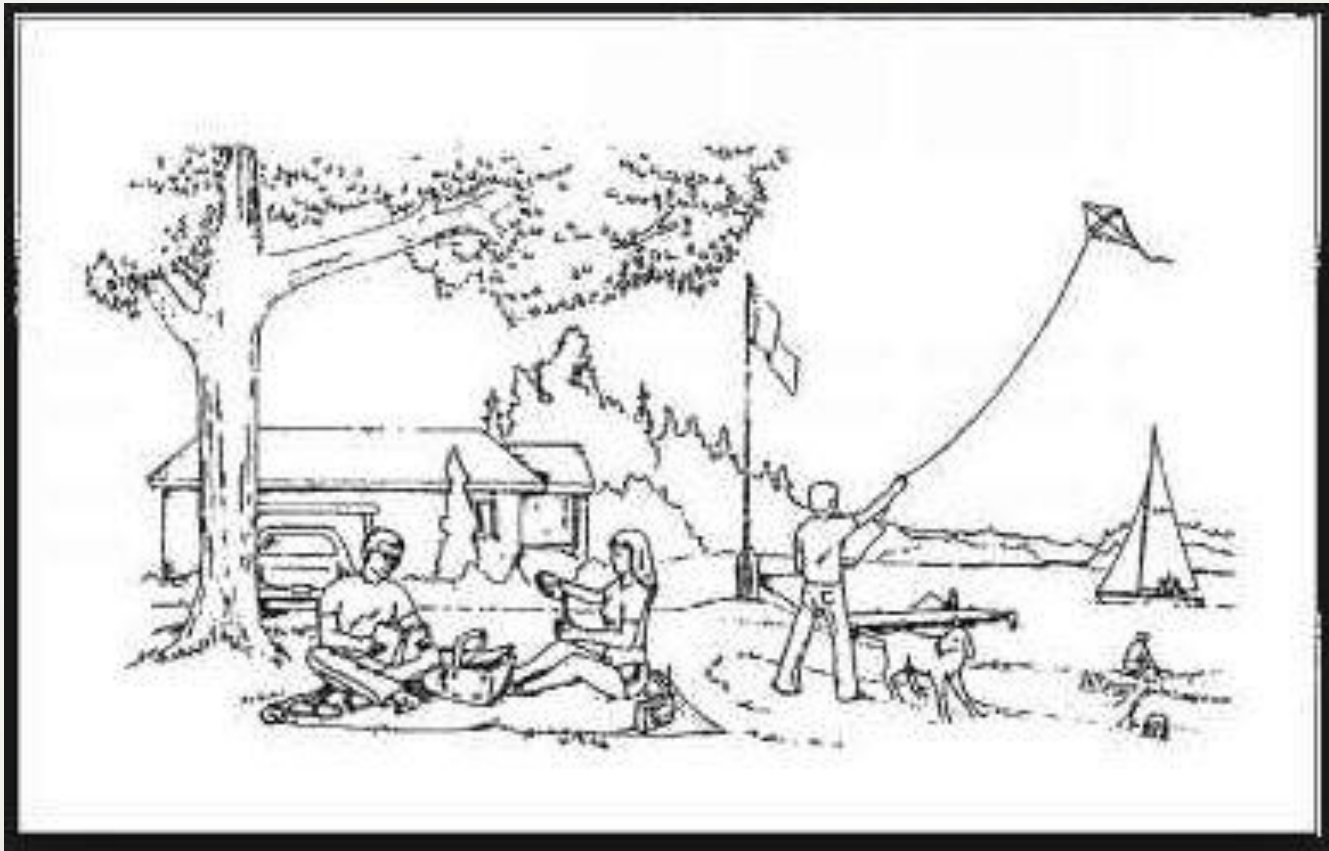At least 2 of 3 of the following other features must be present:

1. Impaired comprehension of syntactically complex sentences
2. Spared single-word comprehension
3. Spared object knowledge

- Left frontal and parietal involvement
- Most commonly associated with FTLD with tauopathy

(Gorno-Tempini et al, 2011)

II. Imaging-supported nonfluent/agrammatic variant diagnosis

Both of the following criteria must be present:

1. Clinical diagnosis of nonfluent/agrammatic variant PPA
2. Imaging must show one or more of the following results:
   a. Predominant left posterior fronto-insular atrophy on MRI or
   b. Predominant left posterior fronto-insular hypoperfusion or hypometabolism on SPECT or PET
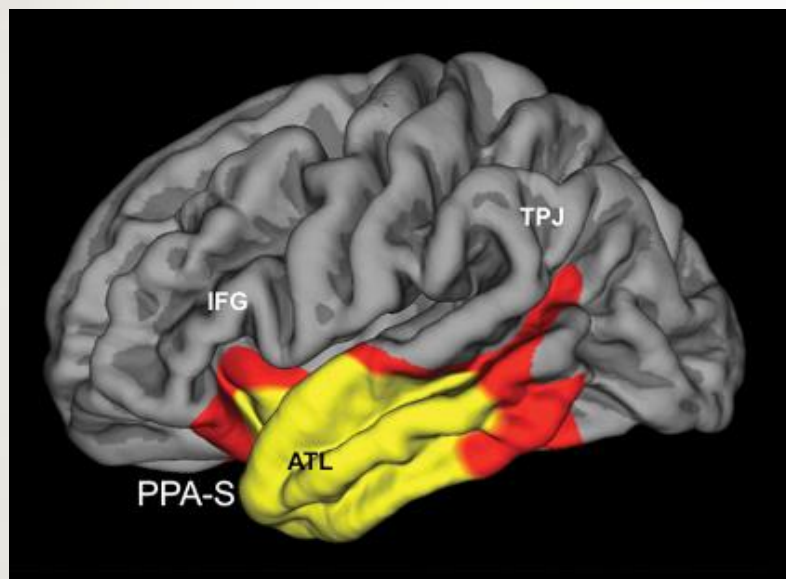
Nonfluent/Agrammatic PPA

BS WAB picture description

Mild cases

Logopenic vs. Nonfluent/agrammatic

- Variability of vowel duration (Ballard et al, 2014)
- Prosodic patterns
- "Islands" of fluent speech with hesitations interspersed
- Presence of vague/filler vocabulary
- Episodic and working memory deficits (Eikelboom et al, 2018)

Semantic PPA

Table 3   Diagnostic criteria for the semantic variant PPA

I. Clinical diagnosis of semantic variant PPA

Both of the following core features must be present:

1. Impaired confrontation naming
2. Impaired single-word comprehension

At least 3 of the following other diagnostic features must be present:

1. Impaired object knowledge, particularly for low-frequency or low-familiarity items
2. Surface dyslexia or dysgraphia
3. Spared repetition
4. Spared speech production (grammar and motor speech)

II. Imaging-supported semantic variant PPA diagnosis

Both of the following criteria must be present:

1. Clinical diagnosis of semantic variant PPA
2. Imaging must show one or more of the following results:
   a. Predominant anterior temporal lobe atrophy
   b. Predominant anterior temporal hypoperfusion or hypometabolism on SPECT or PET

- Left anterior temporal involvement
- Typically associated with FTLD- TDP pathology
- (Gorno-Tempini et al, 2011)

Semantic PPA

https://www.youtube.com/watch?v=fkKrsbwQvrE

Assessment

Standardized Assessment

<u>Language</u>

- Western Aphasia Battery (Parts 1 and 2)
- Boston Diagnostic Aphasia Examination
- Functional Linguistic Communication Inventory

<u>Supplemental</u>

- Episodic and working memory
- Motor speech (apraxia)

Function-based Assessment

- Aphasia Needs Assessment
- Communication History Questionnaire
- Communicative Effectiveness Index (CETI)
- Tobii-Dynavox Personal Interest Inventory

Aphasia Needs Assessment

Appendix and Form 6.2 Aphasia needs assessment.

APHASIA NEEDS ASSESSMENT
(©) 1997, revised 2006, Kathryn L. Garrett & David R. Beukelman

COMMUNICATOR:_____ INFORMANT:_____
INTERVIEWER:_____DATE:_____

	Poorly		So-So		Very Well
HOW ARE THINGS GOING FOR YOU?	1	2	3	4	5
HOW WELL ARE YOU COMMUNICATING?	1	2	3	4	5

WHICH SITUATIONS GIVE YOU THE MOST DIFFICULTY WITH
COMMUNICATION? (Mark all that apply)
- ☐ Talking on the phone
- ☐ Conversations with family or friends
- ☐ Conversations with strangers
- ☐ Discussions about personal business
- ☐ Community Transactions (bank, pharmacy, travel agent, bus driver, etc.)
- ☐ Restaurants
- ☐ Doctor/Medical settings
- ☐ Work
- ☐ Giving directions
- ☐ Understanding others
- ☐ Other: _____

Aphasia Needs Assessment

WHAT WOULD YOU LIKE TO TALK ABOUT DURING CONVERSATIONS?

- ❏ Funny stories about your children
- ❏ Your adventures as a young child/growing up
- ❏ Dating and getting married
- ❏ Being in the military
- ❏ Your worst jobs
- ❏ Your most important job/career
- ❏ Moving or traveling
- ❏ Hobbies or unique interests   List: _____
- ❏ Family history/ancestry/genealogy
- ❏ Local events
- ❏ Current events
- ❏ Sports
- ❏ Politics/the economy/the government
- ❏ Weather
- ❏ Favorite meals/restaurants
- ❏ My house/home town/things to fix
- ❏ My stroke and/or other medical issues

Aphasia Needs Assessment

WHICH COMMUNICATION SKILLS ARE THE MOST DIFFICULT FOR YOU?

- Getting someone's attention
- Introducing myself and others
- Explaining about aphasia and how I communicate
- Engaging in "small talk"
- Introducing new topics
- Interrupting
- Asking questions
- Talking about the present
- Talking about the past
- Answering familiar, predictable questions (e.g., "How was your weekend?")
- Answering questions that require a specifically-worded answer
  - (e.g., "I cooked red beet salad.")
- Explaining something using specific language and a sequence of steps
- Telling a story
- Telling a joke
- Holding my communication partner's attention
- Providing comfort
- Communicating how I feel
- Communicating specific physical needs quickly and accurately
- Expressing commands
- Following commands
- Resolving breakdowns
- Switching from expressing myself to listening
- Finding information I know that I have in my communication system
- Thinking to use another communication strategy
- Spelling
- Helping my communication partner with "clues"
- Staying on topic or on track in the conversation

Aphasia Needs Assessment

DO YOU DO MOST OF THE COMMUNICATING FOR YOURSELF?   YES   NO

IF YOU ANSWERED "NO", WHO DOES?_____

WHAT DO YOUR COMMUNICATION FACILITATORS NEED TO LEARN TO DO?
- ❑ Not to interrupt
- ❑ Not to guess or fill in words unless I say it's OK
- ❑ To guess more efficiently by narrowing down the category of the target message
- ❑ Tell me what they do understand when I have difficulty communicating clearly
- ❑ Slow down when talking to me
- ❑ Give one item of info at a time when talking to me
- ❑ Write things down, draw, or gesture to help me understand better
- ❑ Help me answer yes/no questions by tagging them (yes….or no?)
- ❑ Ask me questions/give me opportunities to communicate
- ❑ Write down possible answers for me so I can point to them
- ❑ Help me find the correct pages/messages when I use my communication system

Aphasia Needs Assessment

WHAT COMMUNICATION STRATEGIES DO YOU or YOUR FACILITATORS CURRENTLY USE? DESCRIBE THEM, and TELL US WHEN YOU USE THEM:

Strategy 1:_____

Strategy 2:_____

Strategy 3:_____

Strategy 4:_____

	Poorly		So-So		Very Well
HOW WELL DO YOU READ?	1	2	3	4	5

WHAT KINDS OF MATERIALS WOULD YOU LIKE TO READ?
- ❏ Popular Magazines   Titles:_____
- ❏ Daily Newspaper   Sections: _____
- ❏ Personal Letters
- ❏ Professional articles or journals
- ❏ Fiction – short books Topics: _____
- ❏ Fiction – long books   Topics:_____
- ❏ Nonfiction   Topics: _____
- ❏ Email
- ❏ Other: _____

	Poorly		So-So		Very Well
HOW WELL DO YOU WRITE?	1	2	3	4	5

WHAT KINDS OF THINGS WOULD YOU LIKE TO WRITE?
- ❏ Lists of things to buy or appointments to remember
- ❏ Bills and forms
- ❏ Cards
- ❏ Short personal letters
- ❏ Long letters
- ❏ Stories
- ❏ Business documents (letters, requests, manuscripts)
- ❏ Journals or diary entries
- ❏ Email

Considerations in Behavioral Treatment

REHABILITATIVE

- **improving or maintaining** language skills

- **insight and motivation** key factors

- **family/caregivers** must be involved

- **will not eliminate difficulties** with communication

COMPENSATORY

- **enhancing communication**
  - patient-oriented strategies
  - "other"-oriented strategies

- **communication vs. speaking**

- **multi-modal communication** methods and supports

Lexical Retrieval Protocol

Beeson et al (2011)

Goal: Improve lexical retrieval using a semantically-based intervention for a 77 yo patient with Logopenic PPA (2.5 years post onset)
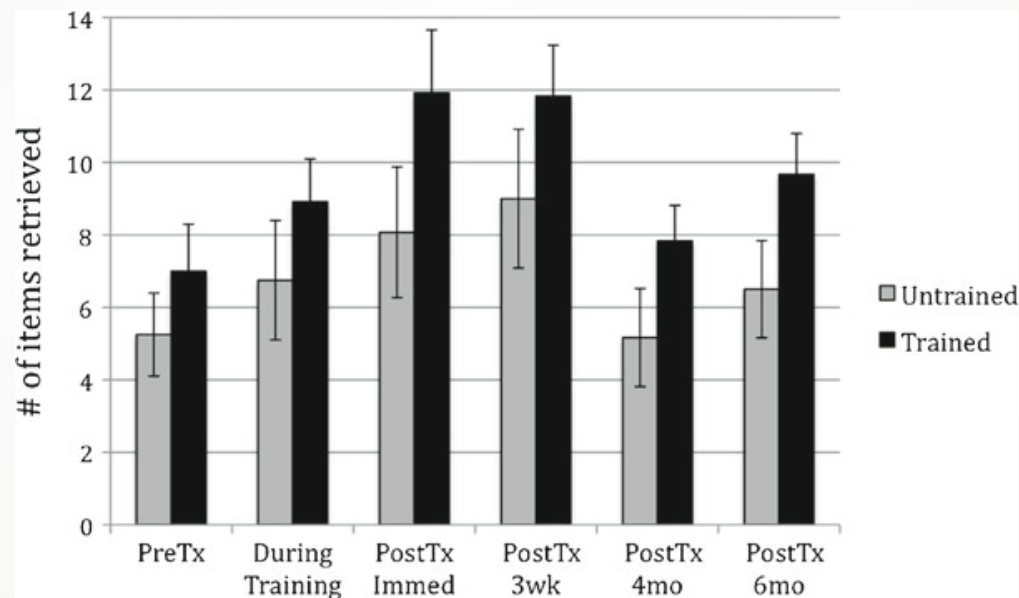
Method: Two-hour sessions, 6 days/week for two weeks; 1 hour daily homework; 6 categories of 30 words (2 days of treatment per category)

- Day 1: Naming practice of personally relevant pictures w/ and w/out labels, subcategorization of items, comparing/contrasting items, generative naming within category

- Day 2: Focus on semantic elaboration (e.g. attributes, functional use, location, similar items, category, etc…)

- Homework:
  - Review labeled pictures
  - Written generative naming by subcategory
  - Schematic diagram creation

Lexical Retrieval Protocol

Beeson et al (2001), cont'd:

Results:

Results showed improved naming of trained and untrained items immediately following training and 6 months post treatment

Participation-focused Protocol

Newhart et al (2009)

Goal: Improve functional communication using a cueing hierarchy to teach use of a communication notebook.

Subject: 65 year old female

Treatment: 1hr sessions; 3 sessions/wk; 8 wks; No homework; 2 categories of 40 words

Cueing Hierarchy for Naming Pictured Objects

1. Spontaneous naming
2. Written naming & oral reading
3. Search for word in notebook
4. Clinician assisted search for word in notebook
5. Repetition of name

Results:
- Naming accuracy over 90%
- Consistently used her notebook

Case Study at PBPRI

Phipps, Barry, and de Riesthal (2016)

Purpose: "describe the clinical decision making process in managing the communication deficits in a patient with primary progressive aphasia - logopenic subtype. Two evidence-based treatment approaches were implemented…"

Participant: 75 yo male with logopenic PPA, 6 years post onset

Case Study at PBPRI

Method:

Visit #1

Counseling and Introduction to AAC

- Word lists/scripts

- Oxford Picture Dictionary

- Picture based communication book

- Speech generating ipad apps

- Dedicated speech generating device

Case Study at PBPRI

Visit #2 and 3 Impairment-based Intervention

Treatment: 1 hr session; 1 day/wk; 2 wks; 1 hr of daily homework; 1 category of 12 words

Activities:

- Read through labeled pictures

- Categorization of pictures

- Semantic Feature Analysis

Homework:

- Generative naming by category

- Written semantic feature analysis

Case Study at PBPRI

Visit #4: Progress Monitoring

Results:

• No improved ability to name trained items

Immediately post treatment.

Case Study at PBPRI

Visit #5: Participation-directed Intervention

Treatment: 1hr sessions; 1 sessions/wk; 2 wks; No homework; 2 categories of 12 words

Cueing Hierarchy for Naming Pictured Objects

Black = Newhart Protocol

Blue = Protocol Additions with JZ

1. Spontaneous naming
2. Written naming & oral reading (used letter board if needed)
3. Search for word in notebook
4. Clinician assisted search for word in notebook
5. Repetition of name & creation of word association

Case Study at PBPRI

Results

- Cues required to look up the word in notebook.

- Independently located word on 87% opportunities.

- Added new words to notebook at home!

Qualitative Results

- Increased confidence and independence with utilizing trained word-finding and communication strategies
- Demonstrated ownership of the established AAC system
- High motivation to continue developing his word lists
- Able to reference names quickly during conversation using his pocket word book
- Reported increased satisfaction with communication effectiveness
- Improved communication partner strategies and cueing techniques

AAC for patients with PPA

Fried-Oken (2008)

- Proposed three primary treatment goals related to AAC in PPA:

1) To **compensate for progression of language loss** vs. stimulate the language system to regain skills

2) To **start early.** Begin compensatory treatment as soon as possible. Be proactive so the person with PPA can learn to use communication strategies and tools

3) **To include primary communication partners** in all aspects of training

Proposed Stages of Intervention during the Neurodegenerative Language Process: NFPA

Stage	Treatment	Partner involvement
I: No noticeable changes in expressive language	Education	Education
II: Detectable language lapses with hesitations and dysfluencies	Behavioral strategies to support conversation	Partners learn how to ask questions, reduce time demands on conversation, provide choices, and alter verbal and physical environment to support communication
III: Reduction in language use (circumlocutions; paraphasias; simplification; agrammatism)	Introduction of low tech AAC with training on downshifting for most effective communication strategy	Partners learn strategies and message selection techniques to identify visual forms of mental dictionary.
IV: Use of AAC tools and other techniques to augment expression	Introduction of additional tools and techniques for multi-modal communication system, including speech generating devices	Partners learn strategies and operations of each tool. Continue message selection techniques to identify visual forms of mental dictionary.
V: No functional language	Reduce tool choice if options become too overwhelming; continue family/care giver education and environmental support for established multi-modal communication system.	Partners become pivotal in successful interaction. They may carry the content of conversation while supporting participation with multi-modal techniques.

(Fried-Oken, 2008)

AAC

Low-tech AAC options

- Communication books/boards

- Photo albums

- Photo journals

- Word lists

- Picture dictionaries

- Gesture/ pantomime

- Writing/drawing

AAC

High-tech AAC options

Tablet + apps with easy customization

- E.g. EE Speech, SceneSpeak,
     Dynavox Compass, SnapScene,
     Alexicom

Dedicated Speech Generating Devices (SGD's)

- E.g. Lingraphica TouchTalk, Tobii T-10 with Compass software

"Other"-Oriented Strategies

Supported Conversation for Adults with Aphasia

Acknowledge Competence

• Techniques to help patients/clients feel as though they are being treated respectfully

Reveal Competence

• Techniques to get and to give accurate information

(Kagan, 1998)

"Other"-Oriented Strategies

Acknowledging competence

- Speak naturally
- Acknowledge frustrations and fears of being thought of as unintelligent (e.g. "I know you know")
- Deal openly with communication breakdowns
- Take equal ownership of communication breakdowns
- Incorporate supports naturally

"Other"- Oriented Strategies

<u>Revealing Competence</u>

IN:

- Use short, simple sentences and expressive voice
- Use gestures, write key words, point to pictures, etc. as you speak
- Eliminate distractions
- Check for comprehension (watch body language and facial expressions)

"Other"- Oriented Strategies

Revealing Competence

OUT:

- Ask "yes/no" or fixed choice questions

- Make sure individual has a way to respond

- Ask one thing at a time

- Ask the patient/client to give clues by gesturing, or pointing to objects, pictures and written key words (e.g. "can you show me…?")

- Give the patient/client time to respond

"Other"-Oriented Strategies

Revealing Competence

VERIFY:

Reflect: repeat the PWA's message

Expand: add what you think the patient/client may be trying to say

Summarize: pull things together at the end of a longer discussion

Take Home Messages

- Classification of PPA is **an opportunity for the SLP to use specialized skills** to add meaningful information to clinical picture to support differential diagnosis

- Treatment should include **patient and family education/counseling, training of compensatory tools and strategies, and partner communication training.**

- Stimuli used should be **functional and patient-specific.**

- **Flexibility in treatment approach is important** as patient's communication and cognitive abilities change over time.

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