Aging Well with Dementia: Supporting Conversational Skills of Individuals with Progressive Aphasia

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There are a group of older adults who cannot participate in conversations successfully because they are slowly losing their language. They have *primary progressive aphasia (PPA).*

Characteristics

- Age of onset 55-65 years old

- Preponderance of males

- In the community, they are still being diagnosed with Alzheimer's disease, but their non-verbal memory is fine.

First Problems

- *Anomia* or trouble thinking of or remembering specific words when talking or writing;

- Slow, hesitant speech frequently punctuated by long pauses and filler words;

- Marked increase in speech errors (substitutions or distortions);

- Struggle for speech sounds, initial apraxia.

Progression of disease varies

– Yes/No confusion for responses
– Can lead to mutism
– Written language generation often mimics spoken language generation.

The Treatment Challenge:

To put the person's residual lexicon **visually in front of him** so that he can participate in daily activities as language skills decline.

The research challenge

There is no evidence that Augmentative and Alternative Communication helps people with PPA with their daily expression.

Augmentative Communication Approaches

- Speech
- Vocalization
- Gestures
- Eye gaze
- Body language
- Sign language

- Paper and pencil
- Communication books
- Communication boards and cards
- Talking toys
- Speaking computers
- Talking typewriters
- Speech generating devices

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Our purpose

To provide evidence that simple AAC systems (communication boards) support adults with PPA during conversations.

1. Make 16-item personalized boards (based on autobiographical memory) with photo + label.

2. Train individuals how to use boards during conversation.

3. In 6 VERY controlled conversations with 10 scripted questions compare language use with and without system.

Board topic: Garage Sales
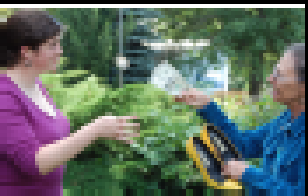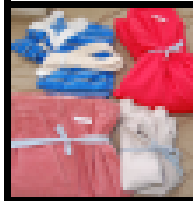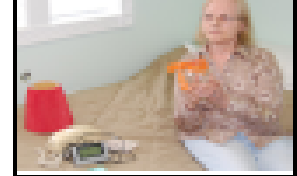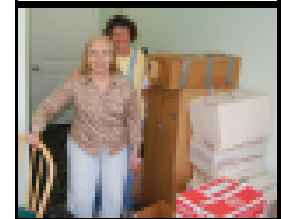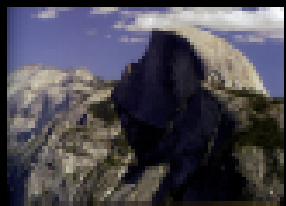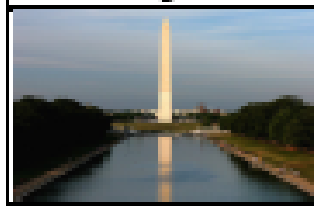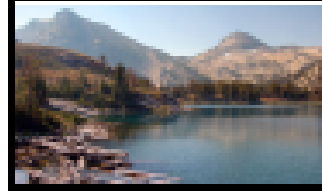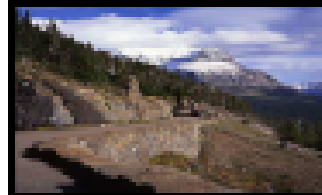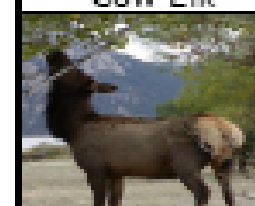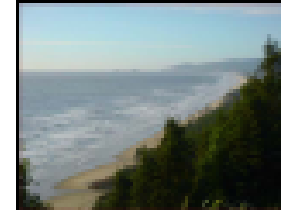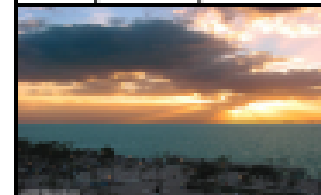
Board Topic: Traveling

Study Procedures*

- **Phase 1.** Visits 1-3 are devoted to consenting, full language evaluation, and a discussion of favorite topics of conversation.

- 1 topic will be chosen and a list of 16 words that the person with PPA would use to discuss the conversational topic will be created (*autobiographical memory*).

- Researchers use this list to create a personalized communication board.

* Input from participant with PPA who was an SLP & now attends staff meetings.

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Study Procedures Continued

- 6 study visits: Individuals with PPA engage in a 30-minute conversation over the course of no more than 8 weeks.

- Participants converse with an RA who will follows a personalized script for 10 questions + 2 downshift prompts.

- 3 conversations with the communication system and 3 without system.

- All conversations will be videotaped in the participant's place of residence.

Outcome measure: What is a correct response?

- **In experimental condition:** Any combination of verbal response or pointing to the symbol on the board as long as the specific target word or its synonym has been communicated clearly.

- **In control condition:** Any verbal production of the target or its synonym.

Weighted conversation score

Responses are scored immediately after the 10 questions or follow-up probes:

- 3 points - correct answers to the initial question
- 2 points - correct answers to the first follow-up probe
- 1 point - correct response to the final probe
- Total raw score – range from 0 to 30, with higher numbers -> greater participant independence and accuracy.
- Percentage score – The % of total points possible.
- Indicates S's level of lexical accuracy and the amount of repair needed to elicit the correct responses.

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Hypothesis with weighted scores

- AAC-supported conversations, in comparison to unsupported conversations, will yield a greater weighted conversation score.

- This indicates more success with verbal and nonverbal communication resulting in less downshifting by partner.

Participants
N=10; 60 conversations

- **Primary Progressive Aphasia: N=10**

  (60 conversations)

- **3 additional participants in data collection process.**

Demographics on 10 Participants

- **Gender:** 5 males and 5 females
- **Age:** Mean age of 72.9 years (range = 65 to 78)
- **Educational background:** 12-24 years of schooling (mean 15.4)
- **Living environment:** single family households (urban, suburban, rural farm), and assisted living facilities
- **Length of relationship between participants and communication partner:** 1.5 to 60 years (mean 35.25)
- **Partners:** 8 spouses, 1 friend and 1 paid caregiver.
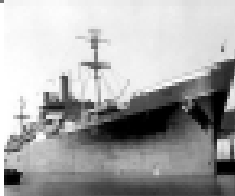
Mr. Smith's board

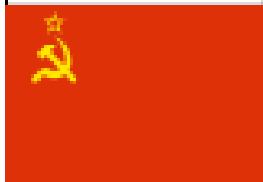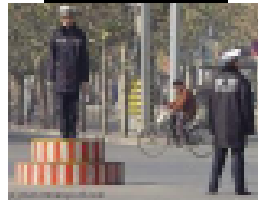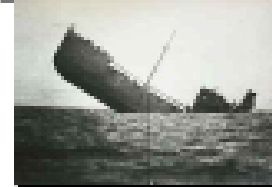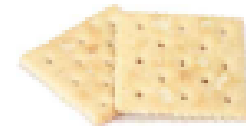# *Sample of scripted questions*

1. You had an old Volkswagen in the Army, what was particularly unique about this car? [Turn signal]

2. Who broke off one of these turn signals while you were in Germany? [Traffic Cop]

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Mr. Smith's control conversation

Mr. Smith's experimental conversation

Statistical results

- Weighted conversation scores in the experimental condition are significantly higher, $F(1, 58) = 18.059$, p<.0001.

- The mean conversation score during AAC supported conversations (overall weighted conversation score for correct response verbal and/or nonverbal) was 70% compared to 37% in the control condition (range = 0 to 100%).
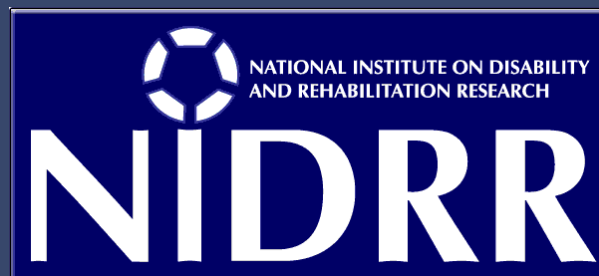
Interpretation of results

- AAC provides meaningful lexical support during conversation for people with PPA.

- AAC significantly reduces the degree of lexical scaffolding required by the conversation partner, leading to greater conversational contributions by participants.

- This approach should be part of a PPA treatment protocol.

Next Steps

- Share these results with clinicians so that people with PPA can contribute to their daily conversations more;

- Collect data on conversations with and without AAC support between people with PPA and their primary partners;

- Determine if AAC supports are generalized as part of daily communication.

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