Symbols and Output Modes for Augmented Conversation in Moderate Dementia

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- Outcome measures from 21 randomly ordered, augmented conversations with Lena, an 86-year-old woman with mod-severe Alzheimer's disease are reported.
- Conversations were held with communication boards containing 5 different symbol sets +/- digitized voice output.
- Symbol sets for 20 food items that Lena enjoyed eating or preparing were created using print alone; 2-D photos alone; 2-D photos+print; 3-D tangible symbols alone; and 3-D tangible symbols+ print.
- Percent nonproductive utterances and total number of utterances are presented for +/-print and +/-voice output.
- Print affected number of utterances produced; the presence of voice output was related to a reduction in verbal conversation.

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Subject

Lena

Dx: moderate/severe Alzheimer's Disease

MMSE: 4

CDR: 3

FLCI : 50

Residence: Locked SNF

Primary care giver: Daughter

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Method

1. Determine participants' preferred topics and select associated vocabulary (Interview caregiver);
2. Randomly assign participant to an AAC device condition;
3. Develop AAC device for each participant;
4. Conduct conversations with participants with and without AAC devices;
5. Analyze 5 minutes/videotaped conversation.

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Flexiboard with 2-D symbols

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Flexiboard with 3-D symbols

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Lena using a communication board (2-D+print condition)

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Data Analysis

- ***Independent variables for analysis:***
  - **+/- voice output**
    (N utterances = 661 with voice; 1268 without voice)
  - **+/- print**
    (N utterances=1290 with print; 637 without print)

- ***Dependent variables:***
  - **Number of utterances;**
  - **Nonproductive utterances:**

  Unintelligible + Perseveration + Fragments
  - **Number of productive utterances:**

  Total utterances – nonproductive utterances

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Conversation conditions (2 conversations/

Control (No board)

2-D photograph

2 + digitized voice output

2 - voice output

2-D photograph + print

2 + digitized voice output

2 - voice output

3-D tangible symbol

2 + digitized voice output

2 – voice output

3-D tangible symbol + print

2 + digitized voice output

2 – digitized voice output

Print

2 + digitized voice output

2 – voice output

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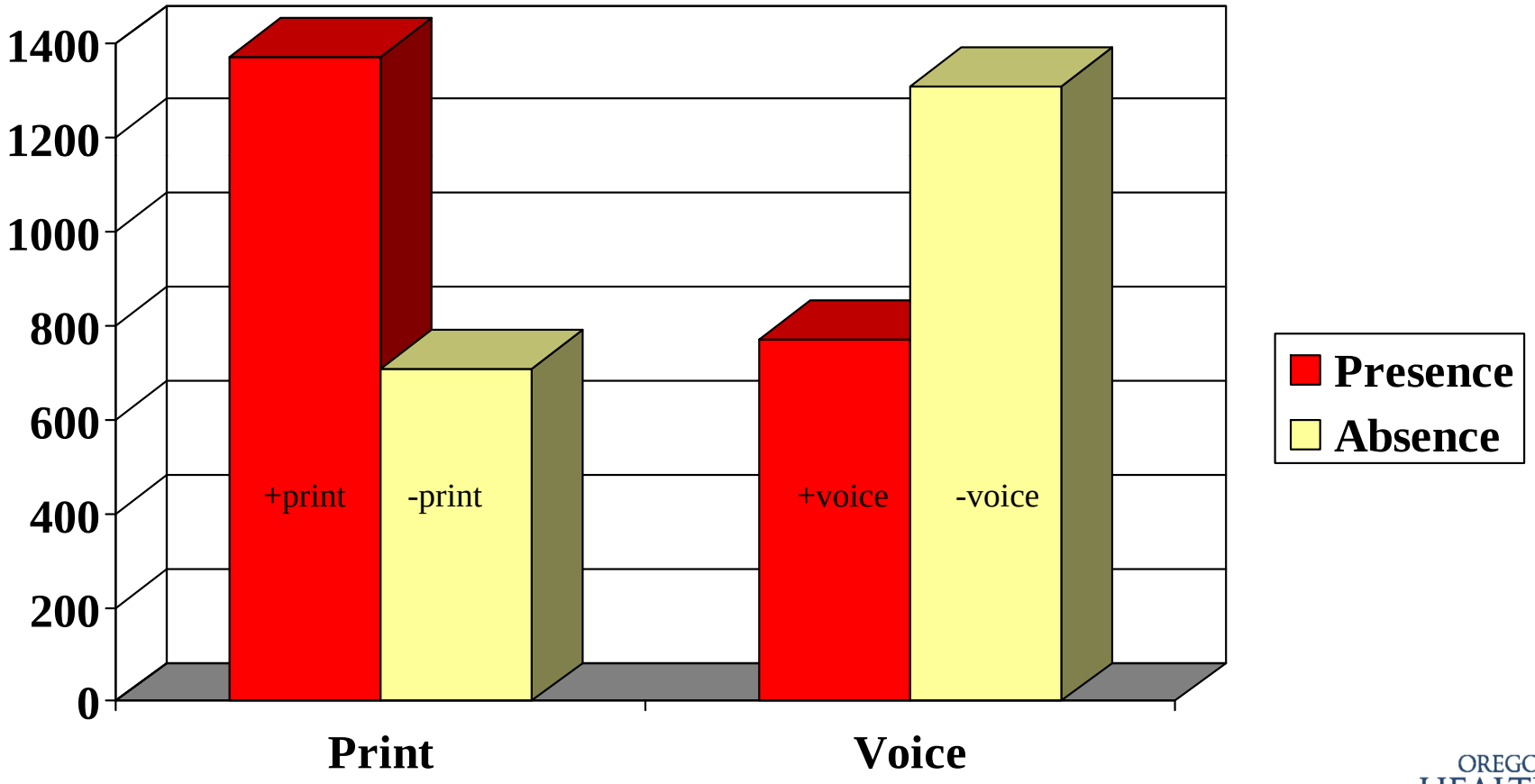
Number of utterances/condition



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Number of utterances/condition

	Total number of utterances	Percent nonproductive utterances	Percent productive utterances
Print conditions	1374	26%	74%
No print conditions	707	22%	78%
Voice output conditions	770	6%	94%
No voice output conditions	1311	26%	74%

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Conclusions

- For this single subject, voice output is serves as a distracter and is related to a reduction in expressive language.
- Print did produce more utterances than non-print conditions.
- The importance of collecting data from *multiple* conversations is stressed due to significant variations in attention, alertness, and motivation.

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