Early Sentence Productions by 5-year-olds using AAC: Effects of Augmented Output

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INTRODUCTION

Defining the Problem

- Language-learning expectations often are set too low for kids using AAC
    - Acquisition of generative, rule-based language is just as important for children who use AAC as for children relying on speech
- Many young children with AAC needs have profiles that indicate the potential to use generative language
    - Even these children frequently have poor expressive language outcomes (e.g., Binger & Light, 2008)

How Children Learn to use Graphic Symbols for Communication: The Translation Hypothesis

- Formulate a mentally represented spoken sentence
- Map this message onto single-meaning graphic symbols

Can We Teach Young Children to Map Messages onto Graphic Symbols?

- This task is neither intuitive nor transparent; even young typically-developing children make frequent errors (e.g., Sutton et al., 2010)
- However, some young children who require AAC rapidly learn to create message combinations (e.g., Binger, Kent-Walsh, et al., 2008; 2010; Binger & Light, 2007; Kent-Walsh, Binger, et al., 2010)
    - And we can teach elementary school-age children to go beyond this and use grammatical morpheme markers (Binger, Kent-Walsh, et al., 2011)

The burning question:

- Can we efficiently and effectively teach young children to map rule-based linguistic structures using graphic symbols? Or are the meta-linguistic demands too high?

Aims for this project:

- Productive use of two-term semantic-syntactic structures
- Generalized use of semantic-syntactic structures

METHOD

Research Design

- Single subject experimental design
- Multiple probe across targets
- 4 participants presented today (16 total in larger study)

Participants

- Age 5 (ages 3-5 in broader study)
- Less than 50% comprehensible on Dowden's (1997) *Index of Augmented Speech Comprehensibility in Children*

Dependent Measures

- Probes: Productions Relating to the Focus of the Intervention
    - Agent-action, Attribute-entity, Possessor-entity
- Generalization Targets
    - Action-object, Agent-action-object, Attribute-agent-action

Communication boards

- Event schema (page-based) boards using ProLoQuo2Go on iPads

Intervention Phase

- Concentrated models
- Play-based instruction

RESULTS & DISCUSSION

(Graphs of results for each child will be shown in the session)

- Three out of 4 children required NO intervention; success achieved during so-called "baseline" condition
- Fourth child required intervention for 1/3 of targets

Why are children succeeding in "baseline" condition?

Our hypotheses:

- Targets are highly salient
    - Very specific targets
    - Highly salient visual cues
- Baseline condition is, in reality, an *augmented output* intervention (Romski et al, 2010)
    - Voice output may be playing a key role
    - We see evidence for this in the self-corrections the children make
- Lends support to our theory…although we are lacking experimental control

What's next?

- Continuing with an additional 12 children
- Examine additional ways to analyze our data
- Revised procedures to streamline targets
    - E.g., agent-action-object without iterations
- Conducting additional analyses
    - Dynamic assessment
    - Language sampling analysis
- Expanded focus
    - For children who are readily successful, we also are targeting grammatical morphemes

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