Increasing Vocal Variability in Children with ASD

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Background

- Three children with autism spectrum disorder, attending an EBI/IBI intensive intervention program for autism participated in a study to increase vocal variability. All three children exhibited infrequent and/or highly repetitive speech sounds, limiting their ability to communicate effectively with the people around them.
- The following study was a replication of previous research conducted by Esch, Esch, and Love, 2009 which looked at increasing vocal variability in children with autism using lag schedules of reinforcement.
- Replication and extension of the limited research to date is imperative in order develop an evidence-base for increasing vocalizations in children with ASD which can then lead to an increase vocal verbal behaviour skills.
- The results of the current study, however, failed to demonstrate a systematic increase in vocal variability over the 3 participants. However, 1 participant did demonstrate a slight increase in vocal variability while the other 2 participants were terminated from the study due to the emergence of SIB during the treatment sessions.

Participants

- Two boys with a diagnosis of ASD – Kai (6;1) and Danny (5;3) and one with a dual diagnosis of autism and Fragile X – John (7;2)
- Each child attended a government funded intensive behaviour intervention (IBI) program 25-30 hours of 1:1 direct therapy a week.
- Inclusion Criteria:
  - limited to no functional speech sounds
  - limited to no echoic behaviour
  - repetitive non-speech sounds / non-contextual vocal stereotypy (NOVS).

Design

Non-concurrent multiple baseline across participants (based on the work of Watson & Workman, 1981) with a reversal.

Non-concurrent

Design change: AB Design for John and Danny due to self-injurious behaviour.

Design change: ABA Design for Kai as attendance was low therefore could not return to baseline for a second time.

Method

- Sessions were videotaped and coded in the moment by the experimenter as well as transcribed and coded by a Speech-Language Pathologist grad student during video-tape play back.
- The dependent variable was vocal variability – defined as a different vocalization than the one presented preceding it. For example, if the child was given the target sound “ba” and responded by saying “oo”, the child’s response would be coded as variable.
- Secondary data was also collected on echoic responses (e.g., if the child repeated the exact same sound as the experimenter it was coded as an echoic).
- Two independent observers collected IOA data for at least 50% of the sessions.

- John and Danny – IOA - 100%
- Kai – IOA - 96%

PHASE 1

- each participant was observed for 10 minutes
- recorded any vocalizations heard using the 44 phonemes checklist
- SP/PL student under supervision contacted The Kaufman Speech Phase Test for Children and The Early Echoc Skills Assessment.
- Target for intervention was selected

PHASE 2

Treatement

- Increased Vocal Variability

PHASE 3

Phase IV of PECS.

Frequency of Vocal Variability

John

Kai

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Discussion

- Increasing vocalizations and vocal variability for children with ASD continues to be a significant challenge.
- The difference in the schedule of reinforcement and putative reinforcers in baseline to treatment may have contributed to the failure to acquire the new behaviours (i.e., during baseline they received social praise plus motor task after each trial but during treatment they only received a motor task after a non-response).
- Baseline characteristics (e.g., higher frequency of varied vocalizations for Kai) may indicate the participants that may be better suited to the use of lag schedules for further vocal behaviour development.

Kai’s Results

John’s Results

Kai’s Results

John’s Results

Figures

Kai’s Results

John’s Results

Kai’s Results

John’s Results

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