A COMPARISON OF TOTAL COMMUNICATION TRAINING AND VOCAL ALONE TRAINING TO TEACH MANDS

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INTRODUCTION

Total communication (TC) consists of teaching vocal-verbal language paired with sign language to produce a targeted word or response.

For individuals with an imitative (echoic) or small vocal repertoire but lack of spontaneous communication, TC helps individuals to use their communication in an effective way.

One study has shown that teaching a manual sign combined with vocal prompts may be more effective in the acquisition of a verbal repertoire than vocal alone (VA) teaching (Barrera and Sulzer-Azaroff, 1983)

When it comes to mand training, it involves the manipulation of motivating operations (MOs) to increase the likelihood of an individual making a request (Desouza, Akers & Fisher, 2017).

Barrera and Sulzer-Azaroff (1983) Compared the effectiveness of VA training and TC training to teach novel tacts to 3 individuals with autism. TC training was more effective and resulted in acquiring more vocal tact responses in less time than the VA training.

Sisson and Barret (1984) Compared VA training and TC to teach sentence pairs - three to four words in length. Two of the three participants showed more rapid increases in target responses when TC training was implemented, resulting in 100% mastery for each targeted response.

METHOD

Participants and Materials

- 3 individuals with autism (aged 7, 8, and 17) who scored a 50 or above on the Early Echoic Skills Assessment (EESA) but limited spontaneous communication.
- Four target mands were selected for each participant. Two targets were quasi-randomly assigned to each teaching condition based on preference rank and number of syllables.

Dependent Variables and Data Analysis

Independent vocal response: a correct vocal response emitted without any therapist delivered prompt for the vocal mand.

Independent sign response: a correct manual sign emitted without any therapist delivered prompts for the manual sign.

- Trials to criterion were calculated by adding the total number of trials required to reach mastery for each target mand. Mastery was defined as independent responses across 6 consecutive trials across at least 2 days (or at least 6 consecutive sessions with at least 80% independence across at least 2 days for targets 1 and 2 for P1 only).

IOA and Treatment Integrity

- Interobserver Agreement (IOA) was calculated for 53.86% of TC trials. Mean agreement for TC was 91.78%, (range, 60% to 100%). Mean agreement for VA was 66.82%. Mean agreement for VA was 94.48%, (range, 50% to 100%).
- Across all participants, 38% of the trials and conditions during the treatment analysis were scored. Mean integrity for TC was 100% while the mean integrity of VA was 99% (range, 71.43% to 100%).

Procedures

Design

A parallel treatments design was utilized to compare the effects of TC and VA conditions on the acquisition of mands.

- Following baseline, 1 target mand response was taught with TC and 1 with VA simultaneously. Following mastery, this was replicated with 2 additional target mands.

Procedures

Baseline

During baseline, pre-session access to the target stimulus was provided for 30 s. Following access, the therapist held up the item in front of the participant and stated “You can use your words and hands to ask for this” (Total Communication) or “You can use your words to ask for this“ (Vocal Alone). No consequences were provided for correct or incorrect mand responses.

Vocal Alone Training

VA conditions were identical to baseline, except that reinforcement was provided for correct, independent vocal mand responses.

- Echoic prompts (“say [item name]”) were delivered using a progressive time-delay procedures, beginning with a 0 s delay.
  - The prompt delay was increased by 5 s following 3 consecutive correct mands.
  - The prompt delay was decreased by 5 s for 2 consecutive incorrect mands.

Total Communication

TC conditions were similar to the VA condition except that reinforcement was provided only when both independent vocal and sign responses were both emitted on a trial.

- Echoic prompts (vocal response) and model prompts (sign) were delivered using a progressive time delay procedure used in the VA condition.

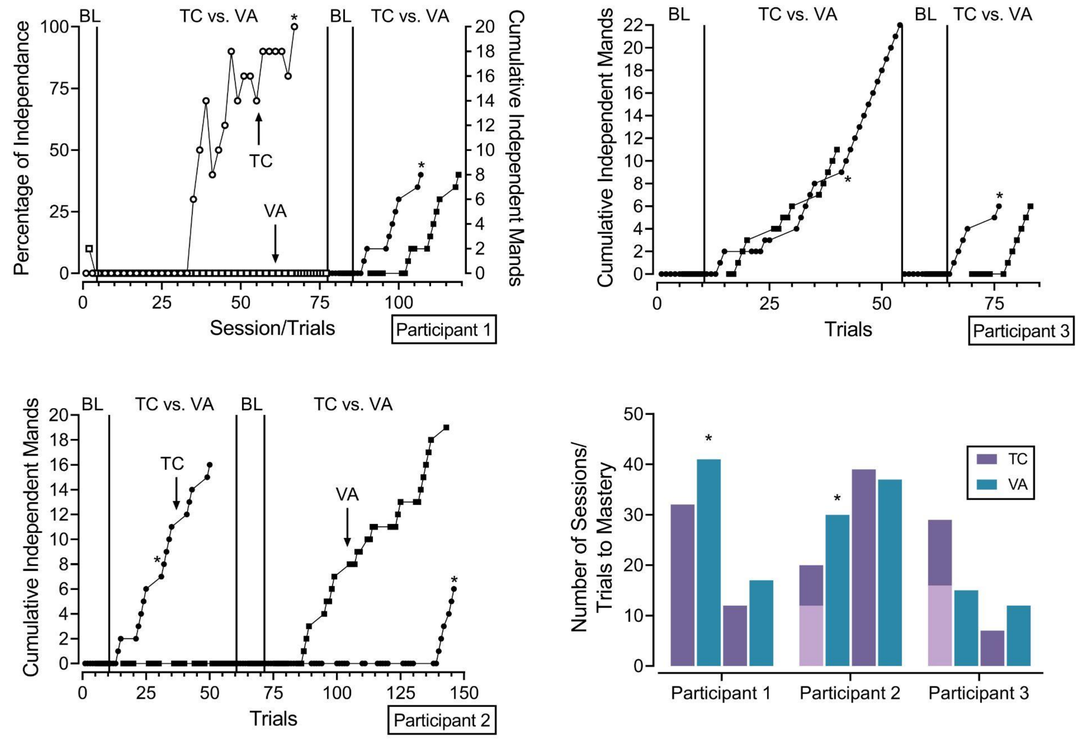

Figure 1 displays cumulative independent mands (or percent of independent mands for the first 2 targets of participant 1) for TC and VA for participant 1 (top left), Participant 2 (top right), and participant 3 (bottom left). Asterisks in these panels represent when the vocal response was mastered in TC, since mastery was contingent on both vocal and sign responses. The bottom right panel displays the sessions/trials to mastery across all participants. Asterisks represent targets that were not mastered.

RESULTS & DISCUSSION

- Participants acquired 6 of the 6 targets in the TC conditions, and 4 of the 6 targets in the VA condition. Across all participants, 4 of the 6 targets were acquired faster in the TC condition compared to the VA condition despite requiring master of 2 topographies of behavior to reach mastery.
- Participant 1 was the only participants to learn both targets faster in the TC condition. Her history with sign language may have contributed to this finding.
- One limitation was that exposure to some targets (both VA targets for participant 2) were not controlled and may have impacted motivation to respond and acquisition.
- Future research should consider other response combinations (e.g., AAC device and vocal responding) to understand the impact of TC across other response topographies.

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