Teaching Language to Infants/Toddlers at Risk for Autism: A Comparison of Methods

Robyn Matsumoto, Rebecca Akroyd, Mari Ueda, and Phyllis Williamson

Applied Behavior Consultants, Inc.

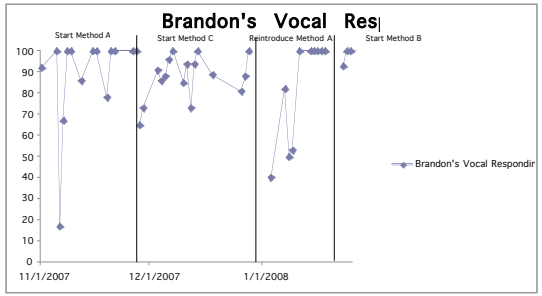
Abstract

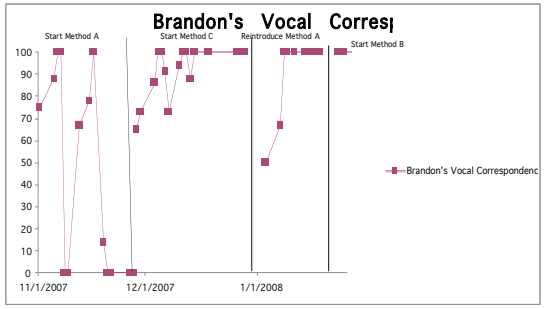
e purpose of this study is to compare two methods of teaching guage to infants/toddlers diagnosed or at risk for autism. Researchers domly assigned participants (18-36 months) in a reversal design using conditions, vocal imitation or mand training. Vocal imitation uires a child to imitate specific sounds or words when presented by a iner. Mand training requires an attempt or approximation of a sound or rd in order to request a reinforcer. In this current study, mand training luded edible and non edible reinforcers. Within mand training, the ticipants receive immediate access to their highly preferred nforcers. Our data demonstrates (across all three participants) mand ining was the most effective method of teaching vocalizations npared to traditional vocal imitation. In addition, mand training with bles was also the most effective than traditional vocal imitation ining with two out of our three participants.

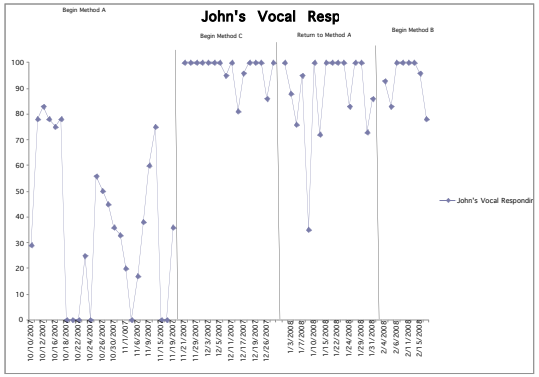
Introduction

ny infants/toddlers diagnosed with autism have significant language ays. Past research assessed some cases of autism may be shaped in at- k children by contingencies of reinforcement occurring before the age two years old. If verbal and social behaviors are shaped before a child ches two years of age and before autistic like behaviors occur, children y no longer be at risk for autism (Drash & Tudor, 2006). Teaching bal operants (mand, tact, intraverbal, and echoic) to infants/toddlers is to increasing their language. Mand training is thought to be one of the liest classes of verbal behavior that emerges in language development l is often the focus of training language-deficient children (Yamamoto Mochizuki, 1988). However, a common deficit in infants/toddlers with ism is the verbal repertoire and the absence of appropriate mand ining (Bourret, Vollmer, & Rapp, 2004). The form of the mand is der the control of a relevant establishing operation for a specific nforcer, and the response is maintained by access to this reinforcer. ereas with echoic (vocal imitation), the form of the response is trolled by a prior verbal stimulus that resembles the response, and the ponse is maintained by some type of generalized reinforcer, such as ial praise (Lerman et al., 2005).

ere have been studies done of the effects of mand training and vocal itation, however, this study assessed whether there is a more effective de of teaching language to infants/toddlers. If one method is more ective than the other, data could indicate we can more effectively pe the verbal and social behaviors for at-risk infants/toddlers in order increase independence and increase the likelihood of placement into s restrictive environments.







Method

Participants

- Three male participants (19-29 months) diagnosed with autism.
- All participants were enrolled in ABC's Infant/Toddler Development Program in Northern California.
- All participants were assessed below developmental levels i language development.

Materials

- The Carolina Curriculum for Infants and Toddlers with Special Needs 3rd edition by N. Johnson-Martin, S. Attermei and B. Hacker.
- The Carolina Curriculum assesses children 0-36 months acr developmental domains. The only section used in this study was functional communication.
- Edible reinforcement included chips, cookies, juice, popcorn chicken, and fruit snacks.

Procedures

- ABAB reversal design

Participant	1st Condition	2nd Condition	3rd Condition	4th Condition
Brandon	A	C	A	B
John	A	C	A	B
Scott	B	C	A	B

Method A = Vocal Imitation
Method B= Vocal Manding using non-edible reinforcers
Method C= Vocal Manding using edible reinforcers

- Each participant was assessed using the Carolina Curriculur for Infants/Toddlers with Special Needs.
- Conditions lasted approximately 2-6 weeks.
- Vocal imitation condition consisted of researchers giving participants an instruction and requiring them to imitate specific sounds or words. Vocal manding conditions consist of establishing a mand repertoire (determining at least 2-3 highly preferred reinforcers tangible and edible).
- Researchers would provide participants with a reinforcing item/edible and let him play with the item or eat the edible. The item/edible was then moved out of the child's reach but still in sight. For example researchers would say, "Do you want train? Say, "Train." Once the child makes an approximation, the research would reinforce the child immediately.
- Trial by trial data was collected for every response across conditions.

Results

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rticipant 1: Brandon

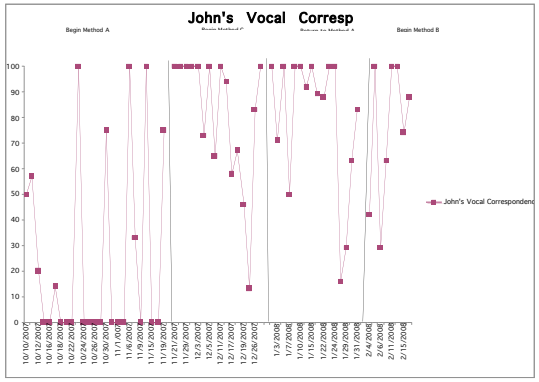
- Data indicates Brandon's correspondence (correct imitation) rate for vocal manding with edibles increased significantly, 92%, compared to 44% in the traditional vocal imitation.
- Overall, Brandon's responding rates were relatively high (consistent) throughout the four conditions.
- When the traditional vocal imitation was reintroduced, responding decreased slightly, yet correspondence increased slightly.
- Overall, Brandon's data indicates vocal manding with non edibles proved to be the most effective model, with vocal manding with edibles being the second best.

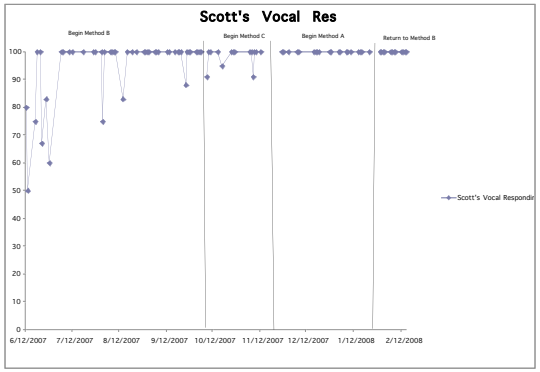
rticipant 2: John

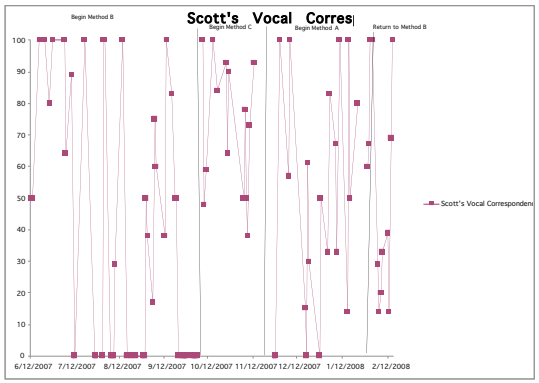
- Data indicates John's response rate for vocal manding with edibles increased significantly, 97%, compared to 36% in traditional vocal imitation.
- In addition, John's correspondence increased from 25% (in traditional vocal imitation) to 82% with manding with edibles.
- John's responding (88%) and corresponding (80%) decreased slightly when reintroducing vocal imitation, however, after introducing manding with non edibles, his responding (94%) and correspondence (75%) increased.
- Overall, John's data indicates mand training with edibles proved to be the best method to teach vocalizations, compared to traditional vocal imitation. Finally, manding with non edibles were slightly lower than with edibles, however it was still significantly higher than traditional vocal imitation.

rticipant 3: Scott

- Scott's data indicates a high level of vocal responding across all conditions.
- Correspondence data indicates the lowest percentages in the traditional vocal imitation condition (49%).
- The highest percentages were in manding with edibles (73%)
- Overall, Scott's data indicates mand training with edibles proved to be the best method to teach vocalizations, compared to all other conditions. Manding with non edibles were also slightly higher than traditional vocal imitation.







Discussion

All participants made progress during this study, establishing verbal operants including mands and echoic behaviors that were not exhibited initially. They are also vocalizing words and frequent speech sounds at moderate to high rate. It was hypothesized infants/toddlers would more likely vocalize in the mand training condition and more significantly vocal manding with edibles. The results support our original hypothesis that vocal manding was the most significant condition. In addition, dat indicated two of the three participants showed greatest acquisition in th vocal manding with edibles.

After analyzing these results, we can apply our findings for future programming. When an infant/toddler initially enters the program with limited vocalizations and correspondence, starting with vocal manding with edibles or without edibles may increase acquisition of a child's verbal behavior. However, all participants demonstrated gains within th area of functional communication. One limitation was the data was not started or collected at the same time. More substantial conclusions coul have been made if all three participants followed the same length in eac condition. Future research could continue with the reversal design with manipulating the conditions more systematically. Increasing the sample size would also increase the accuracy of the results from this study. It is also important to see if the participants generalize these skills by spontaneously making appropriate vocalizations.

References

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For further information regarding this study, please contact: rmatsumoto@appliedbehavior.com.