

Using a Function-based Treatment to Increase Fluent Responding

Kathryn Mann, BCBA and Jennifer Cook, BCBA

Monarch House

ABSTRACT

Two young boys diagnosed with autism spectrum disorder (ASD) displayed excessively slow responding when engaging in task demands and conversations with both adults and peers.

Results of a single-function functional analysis indicated that slow responding to intraverbal (conversational questions) occurred in response to being presented with questions relating to non-preferred items or activities (e.g., academic tasks). Subsequently, a function-based intervention was introduced to increase fluent responding.

Results indicated that contingent escape was not effective in decreasing response latencies for one participant and the addition of a positive reinforcement contingency did not result in significant increases in fluent responding.

These findings highlight the importance of developing effective interventions that can improve the social interactions and educational gains of children with ASD. Some limitations of these findings, as well as areas for future study, are briefly discussed.

INTRODUCTION

Children with ASD may display impaired social skills, which can often manifest in the form of delayed or non-responding to various tasks. This non-responding can interfere with and impact the quality of social interactions with peers, as well as limit educational gains. This can become extremely problematic if it reduces teaching opportunities as a result of waiting for children to complete the tasks they have been assigned. A small number of behaviour-analytic interventions have been developed to target excessively slow responding (Tiger et al., 2007) and of these studies, relatively few involve children with developmental delays. As a result, there is little evidence to support effective treatments for increasing fluency for children with ASD. A majority of the literature on increasing fluent responding focuses on the use of token systems or differential reinforcement of short latencies (e.g., Heinicke & Carr, 2009; Fjellstedt & Sulzer-Azaroff, 1973). However, many of these studies are limited in that they did not determine the function of the slow responding prior to implementing an intervention.

The purpose of the current study was to determine the function of excessively slow responding for two participants with ASD. As well, the study aimed to evaluate the extent to which a function-based treatment, providing escape from tasks, would increase fluent responding to non-preferred intraverbal questions.

ACKNOWLEDGEMENTS

Karyn D'Souza, Alyssa Fast, Lindsey Gomes, Brienne Gosselin, Kelly Ko, and Nicole Rennie

METHOD

Participants, Setting, Response Definition and Data Collection

Two children with with ASD participated in this study. Evan and Isaac demonstrated extremely long latencies to respond to intraverbal questions. Therapists conducted all sessions in a small therapy room of a private facility that provided behaviour analytic services. Sessions were 5 minutes in duration. Therapists conducted 3-5 sessions, 1-2 days per week. The session room was typically equipped with a few small tables, chairs, some toys, and often another therapist and student.

Fluent responding was defined as beginning to emit a vocal response within 3 seconds of the SD (i.e., question being asked).

Functional Analysis

Results of a single-function analysis indicated that both participants demonstrated low rates of fluent responding when presented with non-preferred intraverbal questions compared with preferred questions. These questions were identified through a high probability assessment prior to conducting the functional analysis.

Experimental Design and Procedures

In the baseline conditions, participants were asked a variety of non-preferred intraverbal questions following approximately 3 alternative tasks (e.g., tacting, echoics, etc.). In the intraverbal escape phase, therapists provided escape from the intraverbal task by returning to alternative tasks if the participant responded within 3 seconds. The participant was given 3 opportunities to respond to the question prior to the next trial being presented. Escape from the intraverbal task could be accessed at any point during the 3 attempts. Next an escape phase was introduced whereby the participants could access 30 seconds of escape from all tasks following a fluent response to a non-preferred intraverbal question. This was again available at any point during the 3 attempts. In the first attempt phase, participants were able to escape all demands for 30 seconds only if they responded fluently on the first presentation of a non-preferred intraverbal task. For Evan, an escape plus positive reinforcement phase was introduced. A multiple stimulus without replacement (MSWO) preference assessment was conducted prior to each session. Evan was provided with 30 seconds of escape plus access to his preferred item following fluent responses to non-preferred intraverbal questions.

DISCUSSION

Results of this study contribute to the literature on the treatment of delayed responding in at least two ways. First, conducting a functional analysis provided empirical support for social negative reinforcement (escape) being the maintaining contingency of delayed responding for the participants. This is consistent with hypothesized functions discussed in previous research on the topic of fluent responding (e.g., Tiger et al., 2007). As escape from the intraverbal task itself, was not sufficient to increase fluency of responses, this investigation provides evidence against the effectiveness of a function-based treatment alone. Additionally, findings suggest that the use of escape paired with access to a preferred item may not increase fluent responding. However, as the results were idiosyncratic across participants, it is possible that a function-based treatment could be an effective means to increase fluent responding for some children with developmental delays.

There are some limitations to this investigation that require discussion. First, sessions were conducted in a fluid environment, similar to that of a busy classroom. Although valuable for generalization to the school environment, many distractions were present in the environment. Additionally, therapists were provided with sample non-preferred intraverbal questions, not scripted questions and exact questions asked were not recorded. It is unclear whether the complexity of the questions may have exerted effects not accounted for in the evaluation of fluent responding. Finally, during some of the later sessions, Evan demonstrated delayed responding to a number of the non-intraverbal distractor tasks presented between trials. Additional assessment of Evan's ability to complete other tasks fluently demonstrated 100% fluent responding to both echoic and tacting tasks.

A recommendation for future investigations would be to consider if altering the difficulty of the intraverbal task, perhaps with the addition of a prompt, may influence fluent responding. As well, since both participants responded fluently when asked conversational questions regarding preferred topics, the use of a high probability response sequence including preferred questions should be investigated as a potential treatment.

REFERENCES

- Fjellstedt, N., & Sulzer-Azaroff, B. (1973). Reducing the latency of a child's responding to instructions by means of a token system. *Journal of Applied Behavior Analysis*, 6, 125-130.
- Heinicke, M.R., & Carr, J.E. (2009). Using differential reinforcement to decrease academic response latencies of an adolescent with acquired brain injury. *Journal of Applied Behavior Analysis*, 42, 861-865.
- Iwata, B.A., & Dozier, C.L. (2008). Clinical application of functional analysis methodology. *Behavior Analysis in Practice*, 1, 3-9.
- Tiger, J.H., Boussein, K.J., & Fisher, W.W. (2007). Treating excessively slow responding of a young man with Asperger syndrome using differential reinforcement of short response latencies. *Journal of Applied Behavior Analysis*, 40, 559-563.

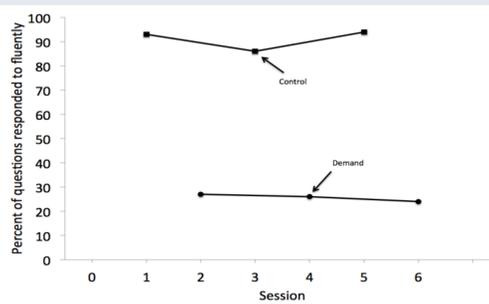


Figure 1. Percentage of intraverbal questions Evan responded to fluently during single-function test functional analysis control and demand conditions.

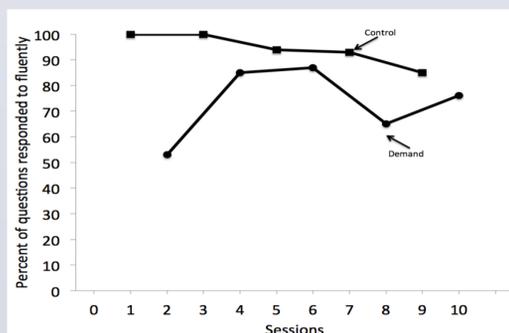


Figure 2. Percentage of intraverbal questions Isaac responded to fluently during single-function test functional analysis control and demand conditions.

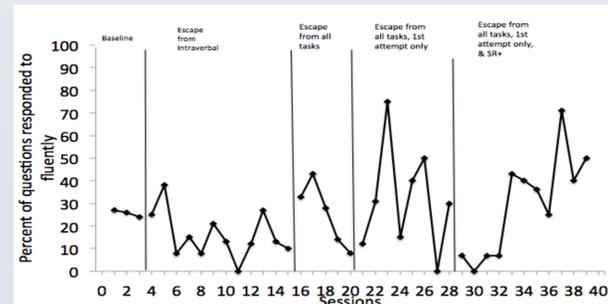


Figure 3. Percentage of intraverbal questions that Evan responded to fluently in a 5 minute session during baseline and intervention conditions (escape from intraverbals, escape from all tasks, escape from all tasks on first attempt only, escape from all tasks on first attempt only + positive reinforcement)

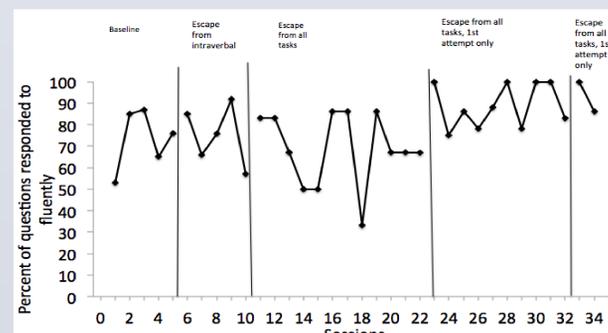


Figure 4. Percentage of intraverbal questions that Isaac responded to fluently in a 5 minute session during baseline and intervention conditions (escape from intraverbals, escape from all tasks, escape from all tasks on first attempt only, escape from all tasks on first attempt only w/ 2 fluent responses)

RESULTS

Figure 1 and 2 shows the functional analysis results for Evan (upper panel) and Isaac (lower panel). Results indicated that lower rates of fluent responding occurred during demand conditions hypothesizing that slow responding was being maintained by escaping non-preferred intraverbal questions.

The overall results, to date, across participants are mixed. Figure 3 shows the percentage of questions that Evan responded to fluently across the various phases. As a whole, results across the phases show that escape from tasks alone is not sufficient to increase fluent responding, and the addition of a reinforcer did not result in a significant increase in fluency. Figure 4 depicts the percentage of questions that Isaac responded to fluently across phases. Results demonstrate that escape from task demands did result in increased fluent responding and Isaac met criterion to increase the number of consecutive fluent responses required prior to accessing escape.