Response Interruption and Redirection and Vocal Stereotypy in Children with Autism: A Summary of Two Articles

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I chose the topic of vocal stereotypy and the Response Interruption and Redirection (RIRD) strategy for similar reasons that I chose exercise and stereotypic behaviours for assignment one. However, exercise is an antecedent strategy for decreasing stereotypic behaviours in children with autism whereas RIRD is a consequence strategy. Strategies to reduce stereotypy are of interest to me because this is an ongoing challenge as a behaviour interventionist in home-based Applied Behaviour Analysis (ABA) programs. Exploring the research behind these strategies has been engaging and I hope to continue this investigation in the future.

**Response Interruption and Redirection for Vocal Stereotypy in Children with Autism: A Systematic Replication**

The purpose of the study conducted by Cassella, Sidener, Sidener, and Progar (2011) was to establish whether a functional relation exists between implementation of the RIRD strategy and decreases in vocal stereotypy through replication of previous research. In addition, expansion on the type of interruption was explored. Previous research used interruptions that were incompatible with vocal stereotypy (i.e., instructions requiring a verbal response). The current study, however, issued instructions requiring a motor response to interrupt vocal stereotypy.

Participants were two boys diagnosed with an autism spectrum disorder. The boys were 7 and 4 years old and were described as being low functioning. They engaged in high levels of vocal stereotypy and were able to imitate and follow one-step directions. Several assessments were employed to verify the function of the vocal stereotypy as automatic reinforcement and so a social purpose to the behaviour could be ruled out.
The study employed two conditions, baseline and RIRD, using an ABAB reversal design. Observations took place at the participants’ schools. Baseline data were collected to establish a stable rate of how frequent the behaviour was occurring in the absence of intervention. In addition, data were recorded on the number of appropriate vocalizations to assess whether the treatment condition had an effect on this behaviour. The RIRD condition was implemented in which each event of vocal stereotypy was followed by gaining the participant’s attention through eye contact and then issuing one-step instructions until three consecutive correct responses were achieved. A model was provided if the participant did not respond to the direction. A subsequent return to baseline conditions occurred followed by re-implementation of the RIRD condition.

Cassella, et al. (2011) found a decrease in vocal stereotypy during the treatment condition as compared to baseline. Appropriate vocalizations, however, remained stable across all conditions. Cassella, et al. concluded that RIRD may be an effective strategy in reducing vocal stereotypy in children with autism but may not be a useful strategy to increase appropriate vocalizations. In addition, it was shown that interruptions do not necessarily need to be topographically incompatible with vocal stereotypy to be effective. That is, instructions requiring a motor response were shown to decrease vocal stereotypy.

A Replication of the RIRD Strategy to Decrease Vocal Stereotypy in a Student with Autism

The purpose of the study by Liu-Gitz and Banda (2010) was also to determine the effects of the RIRD strategy on levels of vocal stereotypy in a child with autism. Lui-Gitz and Banda did not, however, record data for appropriate vocalizations. Also, instructions given to interrupt
vocal stereotypy required a verbal response, therefore, targeting a topographically incompatible behaviour.

The participant was a 10 year old boy with a diagnosis of autism. He was described as having moderate to severe autism and engaged in high levels of vocal stereotypy. As in the study by Cassella, et al. (2011), functional assessments took place to confirm the behaviour was maintained by automatic reinforcement.

The research study also employed an ABAB reversal design. Observations took place in the participant’s school, as well. During baseline the participant interacted with his teacher and classroom as he regularly did. The RIRD condition was then implemented in which vocal stereotypy was interrupted by first gaining his attention through eye contact and then asking him questions about preferred topics. Once he had responded correctly to two or three questions consecutively he was instructed to return to what he had been doing prior to engaging in vocal stereotypy. In addition, appropriate vocalizations were verbally praised during the treatment condition. A return to baseline procedures followed this condition and then implementation of the RIRD condition again took place after the second return to baseline.

As with Cassella, et al. (2011), decreases in vocal stereotypy were found during the RIRD conditions. Liu-Gitz and Banda (2010), however, state that the participant’s teacher noted an increase in appropriate vocalizations. This may be due to several factors. First, by reinforcing appropriate vocalizations during the treatment condition this may have increased the frequency of this behaviour. This may also, however, have drawn his teacher’s attention to this behaviour more than usual leading him/her to report increases. Finally, this may have occurred because interruptions were focused around the participant’s preferred topics which may have
affected the frequency of appropriate vocalizations surrounding these topics. Because data were not recorded on this behaviour conclusions cannot be drawn from this anecdotal report.

**Application of the Information and Future Research**

In working with children with autism in home-based ABA programs, this research is particularly interesting. Strategies to reduce vocal stereotypy are important as these behaviours can often interfere with learning new skills. The RIRD strategy could be implemented with ease during 1:1 sessions in the student’s home or school. The strategy appears to also lend itself to running a concurrent strategy targeting increasing appropriate vocalizations. There are, however, several drawbacks to this strategy that make it difficult to apply to home-based ABA programs. First, the strategy requires that the student possess certain skills in their repertoire, for example, following one-step instructions. When first starting ABA programs, children may not posses these skills and would need to acquire them before implementation of the RIRD strategy could take place. Second, the implementation of this strategy does not readily lend itself to community locations. Home-based ABA programs will often include community outings. The RIRD strategy may serve to stigmatize students while in these community settings. This would only provide a disservice to individuals with autism. Third, if eye contact is required immediately prior to issuing instructions to interrupt the stereotypy the procedure may actually be punishing this behaviour. If students are instructed to follow several directions after making eye contact this behaviour may actually decrease which would pose a significant issue as individuals with autism may already engage in low levels of eye contact. Finally, it may be speculated that by interrupting a student’s stereotypy, behaviour interventionists may be punishing vocal attempts at communicating. Though functional assessments were conducted in the current studies to rule out a social function to the vocal stereotypy, it is not always clear whether this is the case for all
vocal stereotypy. The strategy has the potential to be applied incorrectly to vocalizations that may possess a communicative purpose thereby punishing appropriate language. This potential risk is significant when interacting and teaching individuals with autism.

In order to further investigate these issues future research should focus on several aspects associated with the RIRD strategy. First, research should include an analysis of the differential effects of antecedent strategies, for example exercise, and consequence strategies like the RIRD strategy. If antecedent interventions are shown to decrease stereotypy to a greater degree it may be preferable to implement such strategies as they do not run the risk of punishing students for engaging in what may be appropriate language. Second, RIRD should be explored as it applies to other forms of stereotypy, for example, motor stereotypy such as hand flapping. Future research should also focus on the application of the RIRD strategy in generalized locations, such as in the community. Finally, longitudinal studies should be conducted to determine the long-term effects that RIRD may have on levels of appropriate vocalizations and eye contact. It is imperative to this body of research to determine if RIRD has a detrimental effect on either of these important behaviours. In addition, exploration is required to address whether other strategies specifically targeting increasing appropriate vocalizations and/or eye contact can be implemented simultaneously with RIRD. There are several important issues in need of additional exploration in order to further support the clinical validity of the RIRD strategy.
References


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