Pivotal Response Treatment

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What is Pivotal Response Treatment?

Basic Assumptions
- Treatment in the Natural Environment
  McGee, Krantz, McClannahan (1985); Koegel, O’Dell, & Koegel (1987); Miranda-Linne & Weisz (1992)
- Family Involvement
  Koegel, Bimbela, & Schreibman (1996); Koegel & Koegel (2006)
- Treatment of Pivotal Areas
  Koegel & Koegel (2006)

Pivotal Areas
- Motivation
- Multiple Cues
- Initiations
- Self-Management
- Empathy (in progress)
Motivation

- Core Motivational Variables of PRT
  - Experimental evidence and discovery of variables
    - Child choice (Koegel, Dyer, & Bell, 1987)
    - Direct (Natural) Reinforcement (Koegel & Williams, 1980; Williams, Koegel, & Egel, 1981)
    - Interspersal of Maintenance & Acquisition Trials (Dunlap, 1984)
    - Task Variation (Dunlap & Koegel, 1980)
    - Reinforcing Attempts (Koegel, O’Dell, & Dunlap, 1988)
    - Overall Motivational Package (Koegel, O’Dell, & Koegel, 1987; Koegel, Koegel, & Surratt, 1992; Koegel & Koegel, 2006)

Structured ABA vs. PRT

- Results: (Koegel, O’Dell, & Koegel, 1987)
  - Increase in immediate and deferred imitations
  - Increase in spontaneous utterances
  - Generalization of imitative and spontaneous utterances

PRT: Communication

- Child Choice
- Maintenance Tasks
- Task Variation
- Natural Reinforcers
- Reinforce Attempts

Baseline Intervention
Using Individualized Orienting Cues to Facilitate First-Word Acquisition for Nonresponders with Autism

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Successes and Failures

- Behavioral interventions have been shown empirically to be successful for many symptoms of autism.
- For young children, as many as 95% may acquire speech with behavioral interventions.
- Fewer older children acquire speech.
- Many in the nonresponding subpopulation exhibit a single speech sound or word for all referents.

Orienting Cues

- Intact basic processes of visual orienting among children with autism, even in a situation where attentional processes are taxed by the presence of distractors in the visual field.
- Use of orienting cues to facilitate discrimination learning in children with autism.
Method: Participants

- **Child 1: Zane**
  - 3 years 0 months
  - Nonverbal
  - VABS communication: 0-10
  - ROWPVT/EOWPVT: non-testable
  - CDI-WS: no words
  - In PRT program for 8 months (total = 8 months)

- **Child 2: Parker**
  - 4 years 1 month
  - Nonverbal
  - VABS communication: 0-10
  - ROWPVT/EOWPVT: non-testable
  - CDI-WS: no words
  - In PRT program for 4 months (total = 8 months)

- **Child 3: Alex**
  - 4 years 8 months
  - Nonverbal
  - VABS communication: 1-2
  - ROWPVT/EOWPVT: non-testable
  - CDI-WS: 1 word
  - In PRT program for 7 months (total = 13 months)

Method

- **Design**
  - Multiple baseline across participants

- **Procedure**
  - Baseline PRT
  - Identification of individualized orienting cue
    - Engaged in stimulus activity
    - Oriented to clinician
    - Typically took less than 2 hours
  - Orienting cue intervention - present stimulus immediately (<1 sec)
  - Preceding the verbal model

- **Dependent Measures**
  - Percent of correct verbalizations to verbal models
  - Total number of spontaneous words

Individualized Orienting Cues

- **Zane**
  - Attempted modeled motor actions – unsuccessful.
  - Attempted high-five gesture – successful.
  - High-fives presented immediately before verbal models.

- **Parker**
  - Attempted modeled motor actions – unsuccessful.
  - Attempted high-fives – unsuccessful.
  - Attempted novel stimuli, such as hugs, kisses, tickles, and novel sounds – successful.
  - Novel stimuli prior to presentation of verbal models.

- **Alex**
  - Attempted modeled motor actions – successful.
  - Modeled motor actions presented prior to verbal models.
Results

Figure 1. Correct Responding to Verbal Models Presented by the Clinician.

Table 1. Total Number of Words Produced on the MacArthur-Bates CDI-WS Before and After Intervention and at a 6-Month Follow-Up

<table>
<thead>
<tr>
<th>Child</th>
<th>Pre</th>
<th>Post</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zane</td>
<td>0</td>
<td>38</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2 to 3 word combinations)</td>
</tr>
<tr>
<td>Parker</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Alex</td>
<td>1</td>
<td>245</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Full Sentences)</td>
</tr>
</tbody>
</table>

Future Directions

Potential variables involved

- "Stimulus overselectivity" – attention to relevant cue (i.e., speech model) (Larson, Schreibman, Koegel, & Rehm, 1988; Koegel & Koegel, 1997)
- Novelty – change stimulus properties of verbal opportunities (Larson & Koegel, 1997)
- Behavioral momentum – affecting resistance to change (Hines, 1978; Research & Development, 1997)
- Maintenance tasks – increasing motivation to attend (Koegel et al., 1997; Koegel & Koegel, 2006)
- Short inter-trial intervals (ITI’s) – maintain attention (Koegel, Dunlap, & Dyer, 1980)
Motivational Academics

- Will the use of motivational procedures during writing and math tasks:
  - Result in faster completion?
  - Decrease disruptive behaviors?
  - Increase interest?
- Will gains maintain and generalize?

Procedure

<table>
<thead>
<tr>
<th>Differences Between Baseline and PRT Intervention</th>
</tr>
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<tbody>
<tr>
<td><strong>Baseline</strong></td>
</tr>
<tr>
<td>Materials &amp; Setting</td>
</tr>
<tr>
<td>Task</td>
</tr>
<tr>
<td>Reinforcer</td>
</tr>
</tbody>
</table>

- Examples: Writing and Math

Results

- Faster Completion
- Decreased Disruptive Behavior
- Increased Interest
- Maintained and Generalized
Self-Initiated Writing

- Playing Teacher
- Hangman
- Writing Stories
- Drawing Pictures

A map of Santa Barbara

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- Graduate Students
- Families who participate in our research

Interactive Website

www.education.ucsb.edu/autism
Koegelprt.com

Thank you!