# 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 & Melin (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)

## Empirical Evidence: Simpson (2005)

TABLE 1
Evaluation of Interventions and Treatments for Learners With Autism Spectrum Disorders

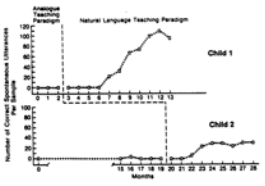
| | Intervention and Treatment Categories | | | | |
|---|---|---|---|---|---|
| Classification | Interpersonal relationship | Skill-based | Cognitive | Physiological/ biological/ neurological | Other |
| Scientifically based practice | | • Applied behavior analysis (Hagopian, Crockett, van Stone, DeLeon, & Bowman, 2000)<br>• Discrete trial teaching (Committee on Educational Interventions for Children with Autism, 2001)<br>• Pivotal response training (Hupp & Reitman, 2000) | • *Learning Experiences: An Alternative Program for Preschoolers and Parents* (Strain & Hoyson, 2000) | | |

## 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 (Burack et al., 1997; Iarocci & Burack, 2004; Minshew et al., 2001)
- Use of orienting cues to facilitate discrimination learning in children with autism
  - (Koegel, Dunlap, Richman, & Dyer, 1981; Lovaas et al., 1971; (Ross & Greer, 2003; Tsiouri & Greer, 2003)

## Research Questions

- Would individualized orienting cues (presented immediately prior to verbal models ) result in acquisition of verbal expressive words in nonverbal children with autism who had a history of non-responding during intervention?
- Will this produce gains in functional communication?

## 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 2 months (total = 8 months)
- Child 2: *Parker*
  - 4 years 1 month
  - Nonverbal
  - VABS communication: 1-2
  - ROWPVT/EOWPVT: non-testable
  - CDI-WS: no words
  - In PRT program for 4 months (total = 10 months)
- Child 3: *Alex*
  - 4 years 8 months
  - Nonverbal
  - VABS communication: 1-0
  - 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

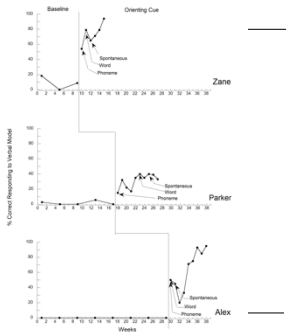
- Attempted modeled motor actions – unsuccessful.
- Attempted high fives – unsuccessful.
- Attempted novel stimuli, such as hugs, kisses, tickles, and novel sounds – successful.
  - Novel stimuli prior to presentation of verbal models.

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.




## Results

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

| Child | Pre | Post | Follow-up |
|---|---|---|---|
| Zane | 0 | 38 | 94 (2 to 3 word combinations) |
| Parker | 0 | 4 | 4 |
| Alex | 1 | 245 | 328 (FullSentences) |

## Future Directions

- Potential variables involved
  - "Stimulus overselectivity" – attention to relevant cue (i.e., speech model) (Lovaas, Schreibman, Koegel, & Rehm, 1971; Rincover & Koegel, 1975)
  - Novelty - change stimulus properties of verbal opportunities (e.g. Carr, Newsom, & Binkoff, 1980)
  - Behavioral momentum – affecting resistance to change (Nevin, 1996; Romano & Roll, 2000; See dissertation, 2007; Ross & Greer, 2003)
  - Maintenance tasks – increasing motivation to attend (Koegel et al., 1989; Koegel & Koegel, 2006)
  - Short inter-trial intervals (ITI's) – maintain attention (Koegel, Dunlap, & Dyer, 1980)

## Motivational Academics

- Purpose

Investigate whether the use of motivational procedures of PRT **improve basic academic skills** in children with autism, specifically **writing and math**.

## Specific Questions

- **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

| Differences Between Baseline and PRT Intervention | | |
|---|---|---|
| | Baseline | PRT Intervention |
| Materials & Setting | Chosen by Adult | Chosen by Child |
| Task | Fixed Difficulty Level | Interspersal of easy and difficult tasks |
| Reinforcer | Unrelated to the Task | Embedded within the Task |

- 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

## Discussion

- **Collateral Gains**
- **Success in the School Setting**
- **Better Outcomes**
- **Prevention**

## Summary – Home/School Coordination

- Reduces Disruptive Behavior
  - Avoidance
  - Escape
- Increases Child Responsiveness
- Increases Child Learning
- Improves Team Work

## Inclusion in Family Routines and Parent Education

- Reduce Stress (Koegel, Bimbela, & Schreibman, 1996)

Dinner

Music

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- Eli and Edythe L. Broad Foundation
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- Families who participate in our research


## Interactive Website

www.education.ucsb.edu/autism

Thank you!

# Practical Ways to Decrease Disruptive Behavior

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## Background

Treatment of Disruptive and Inappropriate Behaviors

- 1960s·1970s – Punishment
- 1980s – Field of PBS
  - Data based methods to improve behavior
  - Respectful of a person's dignity
  - Promoting a person's capabilities
  - Expanding a person's opportunities
  - Meaningful outcomes

## What Triggers Disruptive Behaviors?

Social

- Request to Engage in Non-preferred tasks
- Demanding Situations such as Academics
- Change in Routines
- Denied Access to Preferred Items

Biological

- Pain/Illness
- Medication

Physical/Environmental

- Climate
- School
- Home
- Indoors/outdoors

## What To Do When There is a Disruptive Behavior

- STAY CALM
- Keep everyone safe
- Figure out WHY it happened
- Don't worry about treatment during a crisis
- Develop an intervention plan

## Problem Behaviors

- **Problem behaviors are communicative**
- **Problem behaviors are NOT unique to autism**
- **Problems behaviors occur because they are efficient and effective**
- **Problem behaviors continue to occur because they are inadvertently reinforced**
- **Positive Behavior Support (PBS) has advanced scientifically based practices for dealing with problem behaviors**
- **Necessary to identify functions of and teach new behaviors**

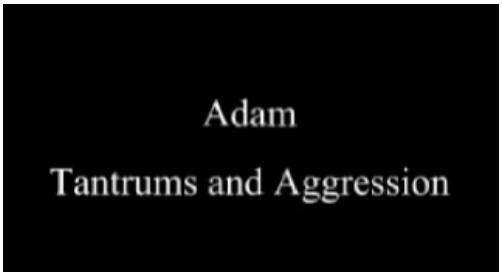
## Assessment

- Functional Behavior Analysis

## GENERAL MOTIVATING FACTORS FOR PROBLEM BEHAVIORS

- Attention/Positive Consequence
- Escape/Avoidance
- EFFECTIVE& EFFICIENT

## Example




## FBA

- FBA: Functional Behavior Assessment
- Avoids error-filled speculation
- Identifies the FUNCTION of the behavior and WHY the behavior is occurring
- Develops efficient and effective behavior plans
- Focus on teaching new behaviors

# Conducting the FBA

## Defining the Target Behavior

- Observable & measurable
- Poor Example: off-task
- Good Example: out of seat, playing with desk objects, talking out of turn

## Collecting the Data

- Direct behavioral observations in the natural environment, across settings/situations
- Compare/contrast to typical peers
- Record behavior (e.g., frequency/rate, duration) Establish a baseline
- Identify antecedent(s) & consequence(s)
- Identify possible setting events
- Find the pattern!

## Identify and Teach Replacement Behaviors

- Identify appropriate positive replacement behavior that serves the same function
- Problem behaviors on extinction
  - Extinction burst
  - Cautions of extinction burst

Replacement behaviors

Functionally equivalent
- Just as effective and efficient
- Teach the replacement behavior
- Practice and Reinforce occurrence of replacement behavior

## Identifying Replacement Behavior

- Age-appropriate
- Context-appropriate
- Effective & efficient
- Address the same function!

Effective & efficient, functionally equivalent replacement behaviors must be explicitly & systematically taught!

## Sample FBA Datasheet

# Baseline Target Behavior

## Antecedent Interventions

- For everyday settings antecedents can involve
  - Social Variables (e.g., friendship patterns & family support)
  - Biological Variables (e.g., physical conditions and psychological deprivation states)
  - Physical and Environmental Contexts (e.g., living or school setting)

## Assess the Curriculum

- Is the academic activity motivating???
  - Child Choice
  - Task Variation
  - Interspersal of Easy and Difficult
  - Natural Reinforcers
  - Reward Attempts

## Develop Meaningful Activities

- Catalogs for math
- Bus Schedules

## Incorporate Student's Names

- Search and replace the names of students in the class for homework

## Priming

- A procedure wherein the child is exposed to the academic materials or activities in advance.
  - Reduces avoidance and escape behaviors
  - Improves on-task responding
  - Improves socialization
  - Improves initiations
  - Improves behavior

## Schedules

- Use a visual schedule to make activities predictable
  - Pictures
  - Words

This makes activities predictable. Even changes in routines can be incorporated.

## Re-Direction

- Teach Alternative Behaviors
- Teach Incompatible Behaviors

## Warnings

- Give students warnings about transitions
  - Timers
  - Verbal warnings

## Use Strengths

- Develop Activities around the individual with ASD's interests
  - Restricted interests
  - Clubs
  - Play Dates
  - Reading

## Preferred Seating

- Arrange specific seating locations for students
  - Circle time (toward the front or middle)
  - Toward the back or side if aide support is needed
  - Near the front of the classroom
  - Near a competent peer
    - Peer assistance
    - Peer modeling

## Circulate!

- Have recess and lunch duty staff circulate
  - Don't stand in one place
  - Recruit parent/community volunteers

Prompt Pro-social Behaviors
Reward Pro-social Behaviors

## Physical Exercise

- Vigorous Exercise
  - Increases on-task behavior
  - Improves academics
  - Decreases interfering behaviors
    - Repetitive Behavior
    - Disruptive Behavior

## Interventions

- Interventions if problem behavior is occurring

## Systematic Desensitization

- Involves gradually and systematically introducing the aversive stimuli
  - Establish anxiety stimulus hierarchy
  - Learn coping mechanism or incompatible response
  - Connect the stimulus to the incompatible response or coping method through counter conditioning
  - Examples

## Reward Systems

- Reward Child for not engaging in the disruptive behavior
  - Sticker charts
  - Classwide reward systems
    - Schedules of reinforcement

## Coordination Across Environments

- Coordinated consistent approach across environments
  - Behavioral Contrast
  - Extinction Bursts

## Parent Education

- Parent Participation
  - Parents assist with goal development
  - Practice with Feedback

## Summary

- Disruptive Behavior
  - Don't Panic
  - Look for Functions
  - Develop replacement behaviors
  - Recommend a Comprehensive, Multi-Component Intervention Program