Promoting the Emergence of Advanced Knowledge

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The Statistics

1 in 1 children are missing a language skill
Language...

• Is uniquely human
• Allows us to communicate with others
• Allows us to communicate with ourselves
• Gives us the ability to respond to the world perspectively

"...surrounds us, penetrates us, and binds the world together"
Skinner’s Verbal Behavior

- 1957
- Proposed that verbal behavior was functional
- Involved the behavior of a speaker reinforced by a listener trained by the verbal community to respond
- Echoic, Mand, Tact, Intraverbal, etc.
Verbal Behavior Research

The Scottish Guy
The Pine Martin

• Has anyone ever heard of a pine martin?
• They’re basically a Scottish version of a weasel.
• Are they tricky or dimwitted?
• If you wanted to see a Pine Martin, how would you get there?
• What instrument would a Pine Martin play?
• What would a Pine Martin’s voice sound like?
• Would you make a business deal with a Pine Martin?
• How is a Pine Martin like a football? How is it not like a banana?
Proud of our Past and Stuck in it too

When new advances in medicine have occurred during the past 50 years, is a 50 year old surgery technique okay? Do children with autism also deserve the most advanced recent treatments?

Figure 5. Data from the 1968-1972 and 2000-2004 five year periods for the percentage of articles studying and/or referring to contemporary conceptualizations in JABA.

Table 1. Examples of Early and Contemporary Conceptualizations in Behavior Theory

<table>
<thead>
<tr>
<th>Early Conceptualizations</th>
<th>Contemporary Conceptualizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement</td>
<td>Behavioral Momentum</td>
</tr>
<tr>
<td>Punishment</td>
<td>Behavioral Economics</td>
</tr>
<tr>
<td>Schedule Manipulations</td>
<td>Matching Law</td>
</tr>
<tr>
<td>Extinction</td>
<td>Establishing Operations</td>
</tr>
<tr>
<td>Classical Conditioning</td>
<td>Adjunctive Behavior</td>
</tr>
<tr>
<td>Avoidance</td>
<td>Self-Control</td>
</tr>
<tr>
<td>Verbal Behavior (i.e., Skinner’s Analysis)</td>
<td>Stimulus Equivalence</td>
</tr>
<tr>
<td>Shaping</td>
<td>Relational Frame Theory</td>
</tr>
</tbody>
</table>

Proud of our Past and Stuck in it too
Since *Verbal Behavior*

- Sidman (early 1970s)
- Stimulus Equivalence
  - Discovered learned responses in the absence of direct training
  - Provided the basis to understanding how meaning or function can transfer across stimuli without direct contingencies
Since *Verbal Behavior*

- Hayes (early 2000s)
- Relational Frames
  - Not all relations are equivalent (non-symmetrical)
  - Expanded upon equivalence to include other relations
  - Derived relational responding – a generalized operant
RELATIONAL TRAINING SYSTEM

Dr. Mark R. Dixon

The Next Generation of ABA Intervention for Children
With Autism and Other Disabilities

100s of Programs
Full Repertoire Assessments

Evidence-Based
Common-Core Aligned
PEAK Relational Training System

• Developed over the past 7 years in response to insufficient or underdeveloped ABA treatment protocols for children with autism

• Prior resources were too simplistic, conceptually limited, and difficult to follow

• Field tested in over 30 schools with more than 300 students with autism
PEAK Relational Training System

• An assessment and curriculum guide for individuals with and without disabilities to promote the emergence of language

• The PEAK assessment provides clinicians and researchers with a tool to pinpoint skills that are absent in a learner’s repertoire

• The PEAK curriculum provides clinicians and researchers with a way to teach the identified skills
PEAK Relational Training System

- PEAK is divided into four modules based on four known learning modalities:
  - Transformation
  - Equivalence
  - Direct Training
  - Generalization
The Assessment
The Assessment

• The assessment for each module is comprised of 184 skills
• The skills range from prerequisite learning skills to complex language skills and transformations
• The assessment can be completed through self-report and/or direct observation and testing
  • Dixon, Whiting, Daar (2014)
• The time required to complete the assessment ranges from 10-minutes to 2-hours, depending on the functioning level of the learner and the experience of the assessor
  • Dixon, Belisle, Whiting, & Rowsey (2014)
Table 3
The PEAK direct assessment items that were completed by >80% of the members in each age group.

<table>
<thead>
<tr>
<th>Age group</th>
<th>1–2</th>
<th>3–4</th>
<th>5–6</th>
<th>7–8</th>
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<tr>
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<td>8D</td>
<td>9L</td>
<td>13X</td>
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<tr>
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<td>6A</td>
<td>8E</td>
<td>9M</td>
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<td>4A</td>
<td>6B</td>
<td>8F</td>
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<tr>
<td>4B</td>
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<td>9G</td>
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that PEAK affects clinicians,
Evaluating the convergent validity of PEAK-DT, PEAK-G, and autism severity
Dixon, Belisle, Rowsey, Stanley, & Daar (2014)
PEAK Curriculum

- Collection of programs designed to teach language and skills based on behavior analytic technology

- Programs are designed to address skill deficits identified in the PEAK assessment

- Can be evaluated using single subject methods or group design methods
Program Instruction Sheet
Program Name: Mand for Item from Peer- 13U

Goal:
- When a preferred item is being used by a peer, the participant will request to share the item.

Materials Needed:
- Highly preferred items such as toys, candy, or other small pieces of food; Peer of the participant

Instructions for Caregivers:
- Show the item. Give the item to the participant’s peer.
- Prompt the participant to ask, “Could you share that with me?”
- If needed, prompt the peer to provide the item following a correct response.

Typical Stimuli:
- Candy, toys, items needed for preferred activities, etc.

<table>
<thead>
<tr>
<th>Stimulus: 1</th>
<th>Stimulus: 2</th>
<th>Stimulus: 3</th>
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<tr>
<td>11</td>
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</table>
## Program Instruction Sheet

**Program Name:** Advanced Gross Motor Skills: Basketball - 4E

### Goal:
- When told to throw a ball in a hoop or basket from a variety of distances or angles, the participant will do so successfully.

### Materials Needed:
- Ball and hoop target (box, garbage can, or similar)

### Instructions for Caregivers:
- Set the target in front of the participant. Have the child toss a ball into it. Move the target closer, further, and at different angles.

### Typical Stimuli:
- **Train:** Ball and Bucket, trash can, large container. Move the target further back.
- **Test:** Use different items to toss and further or more indirect shots. Move the target back and forth while the participant is aiming.

<table>
<thead>
<tr>
<th>Train</th>
<th>Test</th>
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<tbody>
<tr>
<td>1</td>
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<td>3</td>
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<tr>
<td>5</td>
<td>20</td>
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<thead>
<tr>
<th></th>
<th>Date Introduced</th>
<th>Date Mastered</th>
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<tbody>
<tr>
<td>Level 1</td>
<td></td>
<td></td>
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<tr>
<td>Level 2</td>
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</tbody>
</table>
Program Instruction Sheet
Program Name: Symmetry: Tactile to Picture- 4D

Goal:
When taught to select a picture when presented with a tactile stimulus, the learner will be able to select the tactile stimulus when presented with a picture.

Materials Needed:
• A = Tactile stimuli
• B = Pictures of the objects that have the same (A) tactile feel

Instructions for Caregivers:
1. Train A – B: Ask the learner to feel a (A) tactile stimulus with their eyes closed. Then remove the stimulus, have the learner open their eyes, and present an array of (B) pictures. Say, “Find the same.”

2. Test B – A: Present a sample (B) picture. Then ask the learner to feel a series of (A) tactile stimuli with their eyes closed and say, “Is this the same?”

Typical Stimuli:
• A = Stuffed animal, eraser, pine cone
• B = Picture of a stuffed animal, eraser, pine cone

<table>
<thead>
<tr>
<th>Class</th>
<th>Stimuli A</th>
<th>Stimuli B</th>
<th>Stimuli C</th>
<th>Stimuli D</th>
<th>Stimuli E</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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</table>
**Program Instruction Sheet**

**Program Name:** Perspective Taking: You and I Reversal – 12B

**Goal:**
When shown that paper that has different images on each side, the learner will be able to state who sees what when told to reverse perspectives.

**Materials Needed:**
- A, B = Paper with an image (A) on one side and another image (B) on the other side
- C, D = Paper with an image (C) on one side and another image (D) on the other side

**Instructions for Caregivers:**
1. Train A – B: Show both the paper, (A) and (B). Hold the paper with (A) facing the learner. Say, “If I were you and you were me, what do you see?” where (B) is correct.
2. Train B – A: Repeat step 1, but ask, “If I were you and you were me, what do I see?” where (A) is correct.
3. Test C – D: Hold up the paper with side (C) facing the learner. Ask, “If I were you and you were me, what do I see?” where (C) is correct.
4. Test D – C: Repeat step 3, but ask, “If I were you and you were me, what do you see?” where (D) is correct.

**Typical Stimuli:**
- A, D = Dog, house, plane
- B, C = Humming bird, cat, bicycle

<table>
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<tr>
<th>Class</th>
<th>Stimuli A</th>
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<th>Stimuli C</th>
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<th>Stimuli E</th>
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The use of PEAK-DT to teach metaphorical emotional responding to a group of children.
The use of PEAK-G to teach complex verbal behaviors to a child with autism
The effectiveness of PEAK in training categorization of stimuli under a lag schedule of reinforcement

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red</td>
<td>Blue</td>
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<td>2</td>
<td>L</td>
<td>R</td>
<td>S</td>
<td>Letter</td>
</tr>
<tr>
<td>3</td>
<td>Triangle</td>
<td>Square</td>
<td>Circle</td>
<td>Shape</td>
</tr>
</tbody>
</table>
• Teaching Temporal Relational Responding to Children with Autism
  • 1. Baseline
  • 2. Teaching “Before”
  • 3. Teaching “After”
  • 4. Teaching order of the months
Where do we go from here?

• Continue to develop an understanding of the psychometric properties of the PEAK assessment
• Evaluate the effectiveness of the curricular programs, and effective manipulations to the programs at the clinical level
• Disseminate the technology
"Education is the most powerful weapon we can use to change the world."

— Nelson Mandela
Thank you.