Applied Behavior Analysis

with Emphasis on Use of Skinner’s Analysis of Verbal Behavior

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In addition, this presentation would not have been possible without the work of Mark Sundberg and Jim Partington

“Applied Verbal Behavior”

• B. F. Skinner’s “Verbal Behavior”
• Organizational Structure
• The Assessment of Basic Language and Learning Skills
• Establishing Operations

“Applied Verbal Behavior”

• Pairing
• Manding (Requesting)
  – Timing
  – Frequency
  – Benefits of Sign Language
• Transfer Procedures

Organizational Structure Classification of Language

• Mand: Request
• Echoic/Mimetic: Imitation
• Tact: Label
• Receptive: Identification
• RFFC: Identification by Feature, Function, and Class
• Intraverbal: Verbal Stimuli and a verbal response

Why verbal operants instead of communicative functions?

1. We cannot assume that skills will transfer from one operant to another.
2. It explains why many children with ASD can tact, but not mand, or mand but not tact.
   “when motivated....”
3. It provides a hierarchy and method of transfer from one verbal operant to another.
The Assessment of Basic Language and Learning Skills (ABLLS)

- Developed by Sundberg and Partington
- Assessment Curriculum Guide
- Skills Tracking System
- Learning to Learn

Increasing Social Interaction

How do I stop Brittney from running away from me?
Why would she rather play alone than play with me?
The child doesn’t “want” the item if it looks like she might have to “work” for it....

Sd $\rightarrow$ EO $\rightarrow$ R $\rightarrow$ SR+

- EO=Establishing Operations
- EOs are variables that change the value of the reinforcer
  1. They establish the effectiveness of a reinforcer for a particular time or situation
  2. They increase the likelihood that a behavior will occur.

Establishing Operations

- Deprivation
- Satiation
- Reflexive EOs
- Transitive EOs
- Contriving EOs

TEACHING EXAMPLE
REFLEXIVE ESTABLISHING OPERATION

AVERSIVE CONDITION STARTS WITH REMOVAL OF SR+
LESS VALUED SR+
LOWER RATE OF SR+
MORE DIFFULT R
MORE EFFORTFUL R
MANY DEMANDS
FREQUENT LEARNER ERRORS
LESS IMMEDIATE SR+
LOWER MAGNITUDE SR+

EVOKES BEHAVIOR THAT REMOVES
TEACHER DEMANDS AND INSTRUCTIONAL MATERIALS

TEACHER DEMANDS & MATERIALS

EVOKES BEHAVIOR THAT REMOVES
TEACHER DEMANDS AND INSTRUCTIONAL MATERIALS

TEACHER DEMANDS & MATERIALS

ESTABLISH REMOVAL OF TEACHER DEMANDS & INSTRUCTIONAL MATERIALS AS A REINFORCER

EVOKES BEHAVIOR THAT REMOVES TEACHER DEMANDS AND INSTRUCTIONAL MATERIALS (PROBLEM BEHAVIOR)
ABOLISHING THE REFLEXIVE EO

Use teaching procedures that insure:
- Teacher is paired w/ Sr+
- Higher value Sr+
- Higher rate of Sr+
- Greater magnitude Sr+
- More immediate Sr+
- Less effortful

Evolves cooperative behavior that produces teacher mediated positive reinforcement (responses to teacher presented instructional demands)

Functional Response Classes

1. Socially Mediated Negative Reinforcement (Sr-)
   Problem Behaviors
2. Socially Mediated Positive Reinforcement (Sr+)
   Target Behaviors
3. Automatic Positive Reinforcement (SrA)
   Problem Behaviors

Brittney

Comparing Approaches

“Pairing with Reinforcement”
“Increasing Circles of Communication”
“Pez Dispenser of Good Things”
“Therapeutic Rapport”
“Building Social Reciprocity”

PAIRING—How to get kids to run to you instead of away from you...

- Discover likes/dislikes
- Make desirable items available
- Pair yourself with delivery of the goods/activities

PAIRING—How to get kids to run to you instead of away from you...

- Create a history of being associated with wonderful items and fun experiences
- You should signal improving conditions
Add each component of the teaching situation gradually

- He takes it from the table with you
  - 5 feet away
  - 2 feet away
  - 0 feet away
- He takes it from your hand with no eye contact or voice

Add each component of the teaching situation gradually

- He takes it from hand with eye contact no voice
- He takes it from your hand with eye contact and voice (labeling item)
- Give known reinforcers non-contingently

Building Curriculum
Start with the Mand

- Mand: A request for a reinforcer—under the control of motivational variables (EO)

“Manding (Requesting) should be the first type of language to teach because it directly benefits the student. Manding should be targeted regardless of the student's current skill level.”

-Sullivan, Sundberg, Partington, Ming, and Acquisto (2001)
Also supported by:

Requesting Hierarchy
(Adapted from ABLLS by Sundberg and Partington)

1. Requests reinforcer (object or activity) via contact gesture, distal gesture, or proximity cues.
2. Requests reinforcer (present) with single word/sign with vocal (echoic) or gestural (mimetic) prompt.

3. Requests with reinforcer present when asked “What do you want?”
4. Requests with reinforcer not present
5. Mands for reinforcer, spontaneously, no prompts

6. Requests actions
   • of others
   • self*
   • transitive EO
     (action, change in position, location, etc)*

7. Requests attention (early* - Mom, look. Watch this)

8. Requests missing items

9. Requests with “yes” & “no”

10. Requests removal or cessation of an activity/item

11. Requests help

12. Requests with many carrier phrases:
    - I want
    - I would like
    - Can I have
    - Give me
    - I need

13. Requests information using...
   - What
   - When
   - Where
   - How
   - Who
   - Can/Do/Does/Will
   - Whose
   - Why
   - Which

14. Requests future events

15. Requests using:
    - adjectives
    - prepositions
    - adverbs
    - pronouns

16. Generates novel, spontaneous requests without prompting

*Items added or modified by author.
Teaching Requesting Through Imitation

- Contrive Requesting Situations and wait until he signals his motivations ("Building EO")
- Provide Sufficient Training Trials
- “Fade to the EO” through transfer trials and systematic prompt fading

Reminders of the Benefits of Sign Language

- Signs are abstract symbols

- Almost all children with autism can learn to sign despite motor imitation difficulties.
  
  (E. Carr, 1979)

Benefits of Sign Language

- Physical prompts can be used and faded
- Signs are iconic which provides a “built in” prompt

Sign language can improve speech


- Sign language can avoid the negative emotional history involved with speech.
- Signs are portable

Signs do not break the flow of interactive play

- Sign Language assists in development of receptive language
  
  (Lowenkron, 2000)
- Observing what is wrong with humility can point the way toward something right. --Dadi Janki

<table>
<thead>
<tr>
<th>Reasons that past attempts to teach sign language have failed (Adapted From Sundberg and Partington, 1998)</th>
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<tbody>
<tr>
<td>1. First signs taught are too complex (e.g., please, yes/no, help, toilet, more, thank you)</td>
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<td>2. First signs taught may resemble each other too closely (e.g. eat and drink)</td>
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<td>3. First signs may involve a complex response form</td>
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<td>4. Training is conducted under multiple sources of control</td>
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<td>5. Lack of Sufficient Training trials</td>
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<td>6. Individual verbal operants are never established (i.e. mands, tacts, intraverbals)</td>
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<td>7. Responses remain multiply controlled</td>
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<td>8. No progressive curriculum</td>
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<td>9. Single verbal operant focused on extensively (tact)</td>
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<td>10. Failure to establish a signing verbal community</td>
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11. Failure to require signs outside of the training sessions

12. Failure to generalize to novel stimuli, staff, settings, times, etc.

I lost sleep over this.....

Two of the biggest mistakes I ever made:

Teaching prompt dependency

Teaching “more”, “me” and all done as my first signs

Prompt Dependency

• Prompt dependency is a teacher problem, not a learner problem

• No one teaches (SLPs, OTs, EC Teachers, Parents) the art of prompting and prompt-fading.

Rethinking “me”, “more”, and “all done”

• Fact: Across cultures children develop a generalized request form and then fade its use as their vocabulary increases

• Fact: If a child comes up to you and signs “more” you have no idea what to give him

• Fact: “More” is actually an abstract concept. It cannot be used to initiate....only respond.

• Fact: Children with autism benefit from a 1:1 correspondence between a word/sign and an item. PECs does this...

• Me?

• All done?-Cannot be used to initiate—only a mand if the child wants to be all done.
### NET v. ITT

- **Natural Environment Training**
  - Use what motivates them
  - Procedures are clear

- **Intensive Table Teaching**
  - Pair the Learning Situation with Reinforcement
  - Improving Conditions

### TRANSFER PROCEDURES

- **Imitation to Request**
- **Request to Label**
- **Label to Identification**
- **Receptive by function, feature, class to Intraverbal**

### What Can We Learn from AVB?

- **Organization**
- **Establishing Operations**
  - Pairing
  - Manding
- **Transfer Procedures**

### References


