Applied Behavior Analysis Therapy

Continuum Autism Spectrum Alliance

Presented:
Tram Newcomb B.A.
ABA Program Coordinator and Junior Consultant
www.autismspectrumalliance.com

Applied Behavior Analysis (ABA) Therapy Overview

- A Brief History of ABA
- Basic Principles of ABA
- Misconceptions about ABA
- Treatment Strategies for Modification and Maintenance of Behavior
- What ABA Can Do For You

Ivan Petrovich Pavlov (1849-1946)
- Reflex system and digestive glands
- Classical Conditioning
- "Conditional Reflex"
A Brief History

Edward B. Thorndike (1874-1949)
- Educational Psychology
- Cat Puzzle Box
- Development of Law of Effect

John B. Watson (1878-1958)
- Child rearing and development
- Psychological School of Behaviorism
- Little Albert Experiment

Burrhus Fredric Skinner (1904-1990)
- Father of ABA and Verbal Behavior
- Science applied to everyday life
- Radical behaviorism
- Founded own school of experimental research psychology- Experimental Analysis of Behavior
Basic Principles of ABA

What is behavior?

- The activity of living organisms, including everything that people do
- Always observable and measurable
- Operationally define behavior
- Dead Man’s Test- Ogden Lindsley, 1965
  — “If a dead man can do it, it ain’t behavior. And if a dead man can’t do it, then it is behavior.”

(Malott & Trojan Suarez, 2004, p.9)

Basic Principles of ABA

What is ABA?

"Applied behavior analysis is the science in which procedures derived from the principles of learning are systematically applied to improve socially significant behavior and to demonstrate experimentally that the procedures used were responsible for the improvement in behavior."

(Cooper, Heron, and Heward 2007)

Basic principles of ABA

- **APPLIED**: There is a social significance or the behavior is important to the person or society
- **BEHAVIOR**: Behavior is observable and measurable. Targeted behaviors are measured by direct observations
- **ANALYTIC**: The occurrence or nonoccurrence of behavior can be controlled by manipulating variables in the environment. Demonstration of a functional relationship between behavior and its environment
- **TECHNOLOGICAL**: The procedures used are precisely defined and can be replicated
- **CONCEPTUALLY SYSTEMATIC**: The procedures/outcomes are described and explained in terms of relevant principles from which they are derived. Basic principles of behavior
- **EFFECTIVE**: Must improve behavior to a practical degree
- **GENERALITY**: Behavior change lasts over time, occurs in multiple settings, and spreads to other behaviors. These are needed for meaningful behavior change
Basic Principles of ABA

Motivating Operations

An environmental variable that (a) alters (increases or decreases) the reinforcing effectiveness of some stimulus, object, or event; and (b) alters (increases or decreases) the current frequency of all behavior that have been reinforced by that stimulus, object, or event. (Cooper, Heron, and Heward 2007)

Basic Principles of ABA

What is reinforcement?
A consequence that follows a behavior that increases the future frequency of that behavior

- Primary and Secondary Reinforcement
- Positive reinforcement (SR+) - adding a preferred stimulus as a consequence that increases the likelihood of the behavior reoccurring
- Negative reinforcement (SR-) - removing an aversive stimulus as a consequence that increases the likelihood of the behavior reoccurring
- Not all rewards are reinforcers

Basic Principles of ABA

Effective Application of Reinforcement

- Satiation - A condition that occurs after having continuous access to a stimulus
- Deprivation - A condition that occurs after having limited access to a stimulus
- Contingency/ no delay - must be delivered immediately to produce a 1:1 correspondence
- Schedules of reinforcement -
  - Fixed and Variable Interval
  - Fixed and Variable ratio
- Differential reinforcement -
  - reinforcing desired behavior while not reinforcing undesired behavior
  - reinforcing best or spontaneous responses, prompted responses receive lower reinforcement
  - Used to shape behavior
Basic Principles of ABA

What is punishment?
Any consequence that follows a behavior and decreases the future frequency of that behavior

- Positive punishment (SP+): adding an aversive stimuli that decreases the likelihood of the behavior reoccurring
- Negative punishment (SP-): removing a preferred stimuli that decreases the likelihood of the behavior reoccurring

Basic Principles of ABA

Reinforcement and Punishment Review

Basic Principles of ABA

Function of Behavior
Why a behavior is occurring
- Looking at conditions/environments in which a behavior occurs
  - Alone
  - Demand
  - Attention
  - Play
- Functions of behavior
  - Automatic/Sensory
  - Escape
  - Attention
  - Access to tangible
Basic Principles of ABA

Understanding Function of Behavior

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Function</th>
<th>Reinforcing value</th>
<th>Why it is Occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand</td>
<td>Escape</td>
<td>Negatively Reinforcing: Removes undesired demand/activity/interaction</td>
<td>Demand is too easy, hard, boring, confusing, scary, etc.</td>
</tr>
<tr>
<td>Alone/Play</td>
<td>Attention</td>
<td>Positively Reinforcing: Provides access to people of interactions</td>
<td>Individual desires attention, can be positive or negative attention</td>
</tr>
<tr>
<td>Play</td>
<td>Access Tangible</td>
<td>Positively Reinforcing: Provides access to preferred items</td>
<td>Individual wants preferred item</td>
</tr>
<tr>
<td>Alone/Play</td>
<td>Sensory/Automatic</td>
<td>Positively Reinforcing: Provides sensory experiences that are internally satisfying</td>
<td>When there is a need for more sensory input, to expend excess energy</td>
</tr>
</tbody>
</table>

Basic Principles of ABA

The ABCs - Three Term Contingency

- **Antecedent**: What is happening directly before the behavior occurs (things that are said, what is going on in the environment, noises, light level, etc.)
- **Behavior**: What the individual is doing (what it looks like, how many times it is occurring, how long, what he or she is saying)
- **Consequence**: What occurs immediately after the behavior (what is said or done by you or others)

Basic Principles of ABA

Additional Terminology

- **Extinction**: A previously reinforced behavior is no longer being reinforced and as a result, the behavior is decreased
  - Extinction Burst: Target behavior and topography of behavior increases before it decreases when an extinction procedure is initially implemented
- **Shaping**: Reinforcing successive approximations of a behavior until the final targeted behavior is demonstrated
- **Generalization**: Response/behavior occurring across
  - Settings, people, time
Misconceptions about ABA

• ABA is an experimental treatment and not scientifically demonstrated to be effective.
• ABA does not teach a learner HOW or WHY to do something; it only trains them to behave in a certain way.
• ABA is just animal training adapted for use with people.
• ABA just uses food and toys to teach kids into doing things / ABA gets learners hooked on edible rewards.
• ABA is a specialized Autism therapy and is not useful for people with other diagnoses.
• ABA turns learners into “robots”.
• ABA is all table work.
• ABA uses aversives / physical punishment.
• ABA turns childhood away from the child.
• Skills only “work” at the table, with the therapist.

ABA addresses “behavior” only, it’s ABA doesn’t “work” with older kids
ABA is all table work.
ABA uses aversives / physical punishment
ABA turns childhood away from the child
Skills only “work” at the table, with the therapist.

Comprehensive treatment

• Verbal Behavior - Why we bother to communicate
  – Verbal Operants
    • Mand
    • Tact
    • Elicits
    • Intraverbal
    • Receptive
• Discrete Trial Teaching (DTT)
  – Behavior Momentum
  – Stimulus Demand Fading
  – Mix and Vary
• Complex Behavior Chains
  – Task Analysis (DA)

• Problem Behaviors
  • Reinforcement Schedule for Tasks and Behaviors
  • Generalization
  • Maintenance
  • Reinforcement fading
  • Natural Environment Teaching
  • Social Skills Training
  • Caregiver Training

Treatment strategies for Modification and Maintenance of behaviors

How to Teach

• Start and build on success
• Ensure attending before delivering demand
• Use simple and direct language
• Visual Strategies
• Errorless Learning
• Prompt Strategies
• Error Correction

• Be adaptable
• Use creative problem solving
• Engage the learner through play or interests
• Teach individual how to interact with the environment
• Use naturally occurring Ss to promote generalization
• Follow through with all demands
Treatment strategies for Modification and Maintenance of behaviors

How to Reinforce

- **Token Economy**
- **Reinforcement Schedules**
  - Differential Reinforcement of Alternative behavior (DRA)
  - Differential Reinforcement of Other Behavior (DRO)
  - Differential Reinforcement of Lower Rates of Behavior (DRL)
  - Differential Reinforcement of Incompatible Behavior (DRI)
- **Response Cost**
  - Keep value of preferred stimuli high to maintain reinforcing value by creating a state of deprivation
  - Keep reinforcement (tangible, edible, praise) varied
  - Shape and reinforce best responses
  - Incidentally reinforce eye contact, social interaction, etc.

What ABA can do for you:

- Systematically address and treat behavior concerns
- Teach new skills and improve areas of learning deficit
- Clear and concise treatment
- Evidence-Based treatment plans
- Data driven
- Provide a solid foundation on which to build skills
- Address a variety of concerns: Daily Living Skills, Social Skills, Academic Skills, Pre-Academic Skills, Problem Behavior
- Teach you the skill set to address areas of concern

Considerations

- **Assessments**
  - Functional Behavior Assessment (FBA)
  - Assessment of Basic Language and Learning Skills Revised (ABLLS-R)
  - Verbal Behavior Milestone Assessment and Placement Program (VB-MAPP)
  - Assessment of Functional Living Skills (AFLS)
  - Preference Assessments
- **Data Driven**
  - Data, graphs inform the clinician
  - Evidence that treatment is effective
- **Program Integrity**
  - Interobserver Agreement (IOA)/Reliability
- **Everyone is unique**
  - All Home programs need to be individualized
- **Not all BCBA’s are created equally**
  - Having a BCBA does NOT mean that he/she has direct training in autism, any specific developmental disability, problem behavior, or in-home programs. Do your research, ask questions, Curriculum Vitae (CV) and references
- **www.BACB.com** (Behavior Analyst Certification Board website)
Questions?

You mean applied behavior analysis (ABA) isn’t just a treatment for autism?