

## What Is Behavior Analysis?

### 8.1 Behavior analysis:

The field of Behavior Analysis grew out of the scientific study of principles of learning and behavior. It has two main branches: experimental and applied behavior analysis. The experimental analysis of behavior is the basic science of this field and has over many decades accumulated a substantial and well-respected body of research literature. This literature provides the scientific foundation for applied behavior analysis, which is both an applied science that develops methods of changing behavior and a profession that provides services to meet diverse behavioral needs. Briefly, professionals in applied behavior analysis engage in the specific and comprehensive use of principles of learning, including operant and respondent conditioning, in order to address behavioral needs of widely varying individuals in diverse settings. Examples of these applications include: building the skills and achievements of children in school settings; enhancing the development, abilities, and choices of children and adults with different kinds of disabilities; and augmenting the performance and satisfaction of employees in organizations and businesses.

**Applied Behavior Analysis** is a well-developed discipline among the helping professions, with a mature body of scientific knowledge, established standards for evidence-based practice, distinct methods of service, recognized experience and educational requirements for practice, and identified sources of requisite education in universities. Although the above definitions provide an overview of key elements within the practice of behavior analysis, there are additional features of applied behavior analysis that should be clarified in order to even briefly define the field.

Behavior analysis is rooted in the behaviorist tradition and utilizes learning principles to bring about behavior change. Some branches of psychology strive to understand underlying cognitions, but behavioral psychology is not concerned with mentalistic causes of behavior and instead focuses on the behavior itself. Behavior analysis has robust practical applications in mental health treatment and organizational psychology, particularly when focused on helping children and adults learn new behaviors or reduce problem behaviors. Behavior analysis is often used to build abilities in children and adults with disabilities, increase academic skills in school settings, and enhance employee performance.

## **Behavior Analysis Defined**

Behavior analysis is a science based upon the foundations and principles of behaviorism. Division 25 of the American Psychological Division is devoted to the area of behavior analysis.

According to Division 25, the fact that behavior analysis focuses on behavior as a subject makes it unique. The division also explains that this analysis of behavior can occur in three different ways.

- First, through the experimental investigation of behavior.
- Secondly, through applied behavior analysis. This process involves taking what researchers know about behavior and applying it in individual, social, and cultural contexts.
- Finally, through the conceptual analysis of behavior. According to Division 25, this address the philosophical, historical, theoretical and methodological issues in behavior analysis.

## **Experimental and Applied Behavior Analysis**

There are two major areas of behavior analysis: experimental and applied. Experimental behavior analysis involves basic research designed to add to the body of knowledge about behavior. Applied behavior analysis, on the other hand, is focused on applying these behavior principles to real-world situations. Those who work in the field of applied behavior analysis are interested in behaviors and their relationship with the environment. Rather than focusing on internal states, ABA therapists focus on observable behaviors and utilize behavioral techniques to bring about behavioral change.

### **According to the Behavior Analyst Certification Board:**

"Professionals in applied behavior analysis engage in the specific and comprehensive use of principles of learning, including operant and respondent learning, in order to address behavioral needs of widely varying individuals in diverse settings. Examples of these applications include: building the skills and achievements of children in school settings; enhancing the development, abilities, and choices of children and adults with different kinds of disabilities; and

augmenting the performance and satisfaction of employees in organizations and businesses."

## History of Behavior Analysis

Behaviorism was largely established through the influential work of three theorists:

- Ivan Pavlov
- John B. Watson
- B.F. Skinner

Pavlov discovered the conditioning reflex during his studies with dogs, establishing classical conditioning as a learning method. His research demonstrated that an environmental stimulus (i.e. ringing bell) could be used to stimulate a conditioned response (i.e. salivating at the sound of the ringing bell).

John B. Watson extended Pavlov's theory to apply to human behavior, publishing his landmark article *Psychology as the Behaviorist View It* in 1913 and establishing behaviorism as a major school of thought.

B.F. Skinner later introduced the concept of operant conditioning in which reinforcement leads to a desired behavior. These concepts continue to play influential roles in behavior analysis, behavior modification, and psychotherapy.

Behaviorism was once a very prominent school of thought within psychology, although its dominance began to decline during the 1950s as psychologists became more interested in humanistic and cognitive approaches. However, behavioral techniques are still widely used today in psychotherapy, counseling, education, and even in parenting.

## Techniques and Strategies Used In Behavior Analysis

Some of the techniques used by behavior analysts include:

- **Chaining:** This behavior techniques involves breaking a task down into smaller components. The simplest or first task in the process is taught first. Once that task has been learned, the next task can be taught. This continues until the entire sequence is successfully chained together.

- **Prompting:** This approach involves using some type of prompt to trigger a desired response. This might involve issues a verbal cue, such as telling the person what to do, or a visual cue, such as displaying a picture designed to cue the response.
- **Shaping:** This strategy involves gradually altering a behavior, rewarding closer and closer approximations of the desired behavior.

### **Applications of Behavior Analysis**

Behavior analysis has proven to be a particularly effective learning tool for helping children with autism or developmental delays acquire and maintain new skills. These treatments include the Lovaas Method and ABA (applied behavior analysis) and utilize techniques such as discrete trial training. The basic principles of behavior medication are often adapted for use in educational settings, the workplace and childcare.

Behavior analysis is a natural science that seeks to understand the behavior of individuals and to apply this understanding in a wide range of settings.

### **Basic Research**

---

The basic science, sometimes called the experimental analysis of behavior, views environmental influences over behavior as the primary subject matter. Particular emphasis is placed on the simple-to-state but conceptually powerful principle that consequences, sometimes subtle and sometimes obvious and easily identified, change behavior. In a sense, the experimental analysis of behavior is the scientific study of voluntary behavior in many species and genera. It draws upon and contributes to numerous other disciplines, including the neurosciences, psychopharmacology, Pavlovian (classical) conditioning and economics to name just a few.

Some of the topics studied in basic laboratories are:

- Reinforcement processes that select or strengthen new behavior.
- Choice.
- Behavioral economics.

- Addictive behavior, including a conceptualization of addictive behaviors as being due to disturbances in reinforcement processes.
- The role of probability and delay discounting, important in gambling and impulsivity, and self-control.
- Variation and selection in the formation of new behavior.
- Stimulus control processes (discrimination, generalization, conditional discrimination).
- Functional analysis of language.
- The formation of stimulus equivalence classes, in which seemingly disparate stimuli (like the spoken word "chair" and an actual chair) give rise to very similar responses. This area has shed light on how language emerges and the treatment of individual with severe language deficits.

## **Translation and Application**

---

Application flows naturally from good science, and in part because of close ties with basic science, applied behavior analysis has enjoyed enormous success in improving the lives of individuals by focusing on behavior that is of social or personal importance.

Applied behavior analysis has played an especially prominent role in many areas, including:

- The treatment of individuals with intellectual and developmental disabilities, not only by helping people achieve greater independence, but also by developing practical techniques for the humane care of people using positive reinforcement.
- Effective and supportive behavior management in classrooms.
- Data-driven approaches to instruction.
- Contingency management in the treatment of substance abuse.
- Acceptance and Commitment Therapy (ACT).
- Organizational behavior management.
- Behavioral approaches to occupational safety.

Humane practices in caring for companion animals as well as animals in zoos and laboratory settings. The study of the behavioral effects of environmental contaminants.

## **8.2 Functional Behavior Assessment**

Functional behavioral assessment (FBA) is a variation on procedures originally developed to ascertain the purpose or reason for behaviors displayed by individuals with severe cognitive or communication disabilities (e.g., individuals with mental retardation or autism). Because these individuals were unable to fully explain why they were displaying certain inappropriate behaviors, methods were developed to determine why they demonstrated such actions. These investigatory procedures, derived primarily from the orientation and methods of applied behavior analysis were known as "functional behavioral analysis". By gathering data and conducting experiments that evaluated the effects of environmental variables on the behavior, concerned staff members could usually decipher the meaning of the behaviors (i.e., what emotion or message was being communicated through the actions), determine why they were occurring, and develop behavior change programs to help the disabled individual display more appropriate behavior in meeting his or her needs.

Given governmental demands for accountability in education, and the influence of the behaviorist orientation in the field of special education, when the Individuals with Disabilities Education Act (IDEA) was "reauthorized" in 1997, it required the use of procedures similar to functional behavior analysis. When used with students with disabilities who are ages 3-21, these procedures would now be known as "Functional Behavior Assessment".

### **The Basis for Functional Behavior Assessment**

Many students with disabilities display behaviors that are deemed by school and society to be "inappropriate". These aberrant actions may be the reason why the student was provided with special education services, as in the case of students labeled as having "emotional disturbance" (one of the 12 special education categories of disability). However, other students, for whom different impairments are the main concern, might also display undesirable behaviors. These could include, among many others, refusals to work on tasks viewed as too difficult, angry responses due to frustration of goals or inability to communicate with words, or irritating actions displayed in an attempt to gain attention.

Anytime that educators have concerns about the behavior of a student with a disability, they are required by IDEA to undertake the functional behavior assessment process in order to determine why the youngster is showing such actions. By determining the purpose of the behavior, educational personnel can

then devise interventions to help the student display more acceptable behaviors that will meet his/her needs or desires (the "why" of the behavior).

While educators are required to conduct an FBA when persistent behavioral concerns exist (FBA is commonly a part of the pre-referral and referral activities, and IEP development, review, and revision for misbehaving students) they are also required by law to conduct it within 10 days of any singular offense by a student with a disability that is punishable by:

- suspension
- removal to an Interim Alternative Educational Setting.

An IAES is a placement, outside of the present school building, where kids who have broken the law, violated an important school regulation, or been aggressive can be sent by the school administrator for up to 40 days. All services presently provided by the school must be continued in this new placement, and the behavior that led to the transfer must be addressed (perhaps via counseling or instruction). The FBA is conducted in order to understand the reason for the behavior, and to devise ways to prevent it's occurrence in the future when the youngster returns to the home school. In some proactive states, FBA is designated to be conducted as part of an on-going program to identify students in need of specialized services, not only as an isolated practice for severe school code violations.

By definition then, FBA is the process of gathering and analyzing information about a student's behavior and accompanying circumstances in order to determine the purpose or intent of the actions. This investigation is designed to help educators:

- determine the appropriateness of the student's present educational placement and services, and whether changes would help the student to display more acceptable behavior
- identify positive interventions that would reduce the undesirable behavior
- identify appropriate behaviors to be substituted in the place of the inappropriate ones.

Functional behavior assessment is based upon the following assumptions:

- challenging behaviors do not occur in a vacuum; there is a reason for their occurrence

-behaviors occur in response to an identifiable stimuli (event)

-behaviors are governed (weakened or strengthened) by the consequences that follow them

-behavior is a form of communication (i.e., educators need to figure out what a particular behavior is communicating. The displayed action might be saying, in a non-verbal fashion; "I am tired.", "I am bored.", "I'm still upset at what happened earlier", etc.)

-"misbehavior" might actually be adaptive (justifiable and understandable) given the circumstances. For example, in a classroom in which the teacher is an ineffective manager of student behavior, the student of concern might engage in "inappropriate" actions designed to bond with, and offer protection from bullies.

In this particular case, the "misbehavior" could be designed to avoid victimization by other students in the presence of the non-protective teacher.

It is believed that all behaviors demonstrated by all persons serve a function and have a purpose. If benefits didn't result from showing certain behavior, then individuals would stop doing them. Usually, our behaviors are meant to do one of two things:

-obtain something desirable (e.g., attention, money, good grades), or

-avoid or escape something unpleasant or punishing (e.g., penalties, embarrassment, pain, fear)