Why do we use ABA?

> *Applied Behavior Analysis is an objective, evidence-based approach that has undergone almost 40 years (as a formal discipline) of rigorous scrutiny, and has been consistently proven effective. In short, amidst all the fad treatments for ASD, ABA has reliably withstood the test of time.*

Behavior Analysis has two branches: experimental analysis of behavior, which encompasses the scientific research aspect, and applied behavior analysis, which puts those research findings into application. ABA-based approaches to therapy are evidence-based, which means they have undergone rigorous scrutiny and are scientifically supported by valid research. Because of the evidence backing them, and their well-known success, they are the most widely used forms of therapy for treating children with autism spectrum disorders (ASD). Most ABA-based programs focus on helping the child learn how to learn from his environment as well as teaching appropriate social behavior, perspective taking, communication skills, self-help skills, and safety-awareness. Here are some common applications of ABA based therapy:

o *Discrete Trial Training and Incidental Teaching*

   What is it? Discrete trial training (DTT) is a one-on-one form of therapy that teaches skills using a controlled, systematic approach. Incidental teaching relies on the ability of the therapist to create or identify incidental learning opportunities encountered in the natural environment, using the child's own interest.

The research. The most followed-up research on long-term effects of treatment and the most replicated research on early childhood intervention is the Lovaas Model of therapy. The Lovaas Model is a form of early intervention that was created under Dr. Ivar Lovaas at UCLA. It uses the techniques of discrete trial training and incidental teaching to, "break down skills into manageable pieces and then build upon those skills so that a child learns how to learn in the natural environment" (The Lovaas Institute). His pivotal work was published in 1987. Three groups of children under 4 years-old, all of whom were diagnosed with ASD, were assigned to a group to undergo either intensive therapy (40 hours/week), partial therapy (10 hours/week), or no therapy under Dr. Lovaas' supervision. After two years, of the children who received intensive therapy almost half performed at a typically-functioning level, completing first grade in a typical class-room. This level of functioning was achieved by only 2% of the children who did not receive intensive treatment (Lovaas, 1987). This research by Dr. Lovaas has the most follow-up research on long-term effects of treatment and is the most replicated research on early childhood intervention.

o *Applied Verbal Behavior (AVB)*

What is it? In his 1957 book, *Verbal Behavior,* B.F. Skinner described communication as being acquired the same as any other behavior – as a result of its consequences. *Verbal Behavior* also introduced the new terms *mands* (requests, such as "cookie"), *tacts* (comments, such as "train"), *intraverbals* (responses to the language of others), and *echoics* (echoing the verbal behavior of another with 1:1 correspondence). Applied Verbal Behavior is the application of these principles to teach communication.

Some antecedents to ABA

In the early 1900's, while researching salivation rates in dogs, Physiologist *Ivan Pavlov* discovered what he called a conditioned reflex. He noticed the delivery of food (the unconditioned stimulus) would cause the dogs to salivate (the unconditioned response). After some time, the lab coats worn by the people who fed the dogs also elicited the response of salivation. The lab coats became a conditioned stimulus and without the presence of the food, elicited salivation (the conditioned response). This process is now known as classical conditioning or respondent conditioning and is largely responsible for focusing the spotlight of psychology on observable behavioral processes.
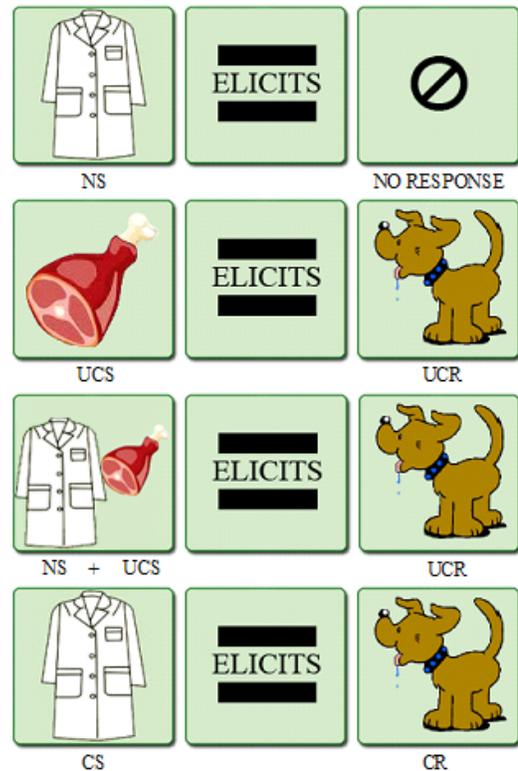
Edward Thorndike was most famous for his Thorndike Puzzle-Box, in which he studied the trial and error learning methods of cats. His law of effect states a behavior that produces a pleasant outcome in a situation is more likely to be repeated; And a behavior that produces an unpleasant outcome in a situation is less likely to be repeated.

In 1913, *John B. Watson* proposed an objective study of psychology he called behaviorism. The goal was to explain behavior through environmental events and responses (stimulus-response psychology). Another of his contributions to psychology was the discovery that although conditioned to fear a specific white rat, infants became fearful of a variety of white

furry objects. That is, infants displayed the same behavior among similar (not exact) stimuli –
they generalized their fear.

In 1928, *B.F. Skinner* enrolled in the Psychology Department of Harvard University.
While recording responses to show the rate with which an animal displayed a specific behavior,
he discovered the behavior of the animal depended not on an antecedent, but on its consequence.
He called this act of operating on the environment *operant behavior* and creating contingencies
to change a behavior, he called *operant conditioning*.

Operant conditioning is the teaching of a new or extinction of a previously learned
behavior through delivery or denial of reinforcement. He believed that behaviors are learned and
maintained as a result of their immediate consequences. Skinner discovered that different
reinforcement patterns yield results at different rates and with different levels of permanence. He
called these schedules of reinforcement. He used reinforcement and *extinction bursts* to teach
pigeons to do many things. He named this process *shaping.* In 1938, he published his theory on
operant conditioning. This theory posits that consequences determine the future occurrence of a
behavior. His research is the foundation of *behavior modification*.