**PS360: Applied Behavior Analysis I**

**Discussion Board Lecture: Unit 8**

**Introduction to Unit 8: Differential Reinforcement**

Welcome, students! The focus of Unit 8 will be on the very effective approach to behavior modification, Differential Reinforcement. In this lecture, we will discuss the following:

* + Differential Reinforcement of Alternative Behavior (DRA)
  + Differential Reinforcement of Other Behavior (DRO)
  + Differential Reinforcement of Low Rates of Responding (DRL)
  + Differential Reinforcement of High Rates of Responding (DRH)
  + Differential Reinforcement of Incompatible Behavior (DRI)

**Let’s begin!**

*Once upon a time, in a galaxy far, far away,* lived an applied behavior analysis (ABA) student, Aiden, who was working to obtain her supervised experience hours to sit for the Board Certified Assistant Behavior Analyst (BCaBA) certification exam. She was working at a cutting edge daycare center in which ABA was used to teach the children (ages 2 through 4) needed skills and to reduce behaviors that get in the way of their success. It was really an experiment in “mass ABA early intervention!”

She loved the job, but she had one young student, Kyle, who was not responding to her usual punishment procedures (a stern lecture about the consequences of unfriendly behavior) when he grabbed the toys with which other children were playing. She decided to ask her professor what she was doing wrong. Dr. Williams asked her what she did after the “stern” lecture. She said she usually had to circulate among the children so she left Kyle to think about what he had done. Dr. Williams asked if Kyle was allowed to keep the toys he had taken from the other children and Aiden said that she did not take them from him because that would have caused a huge meltdown that she didn’t have time to deal with. Dr. Williams asked her what she thought was reinforcing the child’s behavior. Aiden stammered a bit and said, “Hmmm . . . I guess letting him keep the toys.” “Exactly,” Dr. Williams replied.

Dr. Williams recommended a Differential Reinforcement of Alternative behavior (DRA) approach. Aiden would quietly remove the toy(s) Kyle takes from his peers and she will teach Kyle an appropriate, alternative behavior, requesting the toy, and she will reinforce each appropriate request with a star on Kyle’s daily behavior chart. When he earns 5 stars in a day, he can pick a toy from the toy chest to play with for 15-minutes. Can you guess what happened? Yes! Kyle began appropriately requesting toys from his peers and he stopped grabbing toys from others.

How can we explain Kyle’s change in behavior? Well, Aiden reinforced Kyle’s behavior of appropriate requesting by adding a star to his behavior chart – a token economy. When he earned 5 stars in a day, he was able to select a toy from the toy chest to play with for 15-minutes. The “grabbing” behavior was placed on extinction by withholding the usual reinforcer, i.e., the toy(s) he grabbed from others. While the appropriate, alternative behavior, i.e., requesting a toy was reinforced with a token, the star, that could be exchanged for a desired toy from the toy chest when he had earned 5 stars.

**Differential Reinforcement** is a procedure in which you reinforce one set of responses and do not reinforce another set of responses.

* *Differential Reinforcement* differs from *Reinforcement* in that you would use reinforcement when you want to increase a dimension of a particular behavior (Malott & Shane, 2016).
* You would use Differential Reinforcement when you wish to increase one behavior ***while decreasing*** a dimension of another. These *dimensions* could be the behavior’s frequency, duration, intensity/magnitude, or latency (Malott & Shane, 2016.
  + ***Frequency*** refers to the number of times a behavior occurs.
  + ***Duration*** refers to how long the behavior lasts, i.e., the length of time from the beginning of a response to the end of the response.
  + ***Intensity/magnitude*** refers to the force with which a behavior is exhibited.
  + ***Latency*** refers to the length of time between the signal – or opportunity – for a response and the beginning of that response.

**Let’s continue . . . .**

Differential Punishment works in the same way as Differential Reinforcement. One response class is punished while another is not punished (Malott & Shane, 2016). Let’s examine a Differential Punishment procedure. Hearken back to the days of *yester-year* when adults approached house training pets a little differently than we do today:

* John just brought a new puppy home from the pet store. He knew his wife would not be happy with him, or his “Little Buddy,” if Little Buddy did his *business* on their new wood floors. He needed to get Little Buddy trained quickly. Every time Little Buddy did his *business* outside or on one of the “potty mats” that John placed in the mud room, John did not rub Little Buddy’s nose in the *business*. If Little Buddy did his business on the living room floor, however, John would rub Little Buddy’s nose in the *business*.
  + - John punished Little Buddy anytime he did his business any place other than outside or the “potty mat.” Soon, Little Buddy was doing his business only outside.

**There are several different Differential Reinforcement approaches. Let’s examine the differences!**

Often used to reduce habit behaviors, DRI entails reinforcing a behavior that cannot occur with the unwanted behavior while withholding reinforcement for the unwanted behavior - for example, folding your hands on your lap as opposed to biting your fingernails. The incompatible behavior (folding your hands on your lap) cannot occur at the same time as biting your fingernails.

Differential Reinforcement of Alternative Behavior (DRA) requires teaching and reinforcing a desirable alternative to the undesired behavior (but not necessarily a behavior that is incompatible), while withholding reinforcement for the unwanted behavior.

* For example, calling on Laura when she raises her hand and not calling on her – or attending to her when she speaks without raising her hand and waiting to be called upon would quickly increase the desired behavior of raising her hand and waiting to be called upon.

Differential Reinforcement of Other Behavior (DRO) requires the delivery of reinforcement when the unwanted behavior has not occurred for a specific period of time. This is reinforcement for not responding.

* For example, Jake would run out of the classroom any time his teacher worked at her desk or when she helped another student. To implement a DRO procedure for this target behavior, Ms. Thompson divided the day into 15-minute intervals and when Jake went for the entire 15-minute interval without running from the classroom, Mrs. Thompson would spend 2-minutes of one-on-one time with Jake.

Differential Reinforcement of Low Rates of Responding (DRL) is used to decrease the frequency of a particular behavior – but not eliminate it completely. Reinforcement is delivered at the end of a session if the target behavior occurred equal to or under a pre-determined criterion.

* For example, Polly loves to share her opinions during class lectures in her Introductory Psychology course. It has become a distraction to the professor and her classmates. The professor decided to reduce the number of times she “shares” during lectures by setting a criterion level of six comments per the 1-hour lecture. At the end of the lecture, if Polly has “shared” 6-times or less, the professor will single Polly out to ask her opinion on a concept covered in the lecture.

Differential Reinforcement of High Rates of Responding (DRH) is used to increase a desired response that occurs – but occurs to infrequently. Much like DRL, a time interval and pre-determined criterion can be selected and if the criterion is met, reinforcement is delivered.

* For example, Polly has a classmate, Jack, who comments very little in seminars. In fact, his “sharing” typically amounts to a greeting at the beginning of seminar and an “I agree” about mid-way into the lecture. The professor decided it would benefit Jack to increase his “sharing” in the classroom. For the first week, the criterion was set at 2-responses per 1-hour lecture. At the end of each seminar, the professor would ask Jack for his insights on a concept that was covered in the lecture. Praise followed. The following week, the criterion was increased to 3-responses per 1-hour lecture. Soon, Jack was reliably“sharing” 10-times per seminar!

Thank you for viewing your Unit 8 Lecture!

**References**

Malott, R. W., & Shane, J. T. (2016). *Principles of behavior* (7th ed.). New

York, NY: Routledge.