**PS360: Applied Behavior Analysis I**

**Discussion Board Lecture: Unit 3**

**Introduction to Unit 3: Motivating Operations and Antecedent Interventions**

Welcome, students! This lecture will focus on motivating operations (MOs) and their powerful influence on:

* + The value of reinforcement
	+ The value of punishment
	+ The dimension of behavior usually expressed to gain access to reinforcement or that results in punishment
	+ Learning and performance
	+ Antecedent Modifications and Interventions

Let’s get started!

MOs include two broad physical states that have the power to increase the reinforcing value of stimuli, and the behaviors used to access those stimuli, and decrease the reinforcing value of stimuli, and the behaviors used to access those stimuli.

* These broad categories are *deprivation* and *satiation* and include primary reinforcers – reinforcers that are unlearned – that are usually necessary for survival, such as sleep, food, water, and sex.
* While these would be considered “unlearned reinforcers that directly cause biological benefits,” there are also unlearned reinforcers that indirectly cause biological benefits (Malott & Shane, 2016).

Let’s take a closer look . . . .

MOs can impact both learning and performance. If you are using a food reinforcer, i.e., an edible, to increase learning on a particular skill, then learning will be increased if the individual is deprived of that particular reinforcer prior to a training session.

Let’s look at an example . . . .

Johnny loves Cocoa Puffs cereal, so the behavior analyst has decided to use this cereal as a reinforcer during tact (labeling) training sessions. Each time Johnny learns to correctly identify a new picture of a household item, he will be presented with two Cocoa Puffs.

* If we utilize MOs to increase the value of the reinforcer, and the behavior exhibited to gain access to that reinforcer (learning the names of new household items), we must withhold Cocoa Puffs except during training sessions so they will maintain their reinforcing value; essentially, we deprive Johnny of Cocoa Puffs.
* This MO will also be enhanced by scheduling training at least several hours after Johnny has eaten so that he will also be hungry (deprivation of food) at the start of the training session. In this way, MOs can be used to increase learning, but they can also be used to increase performance on skills that were previously learned using Cocoa Puffs (food) as the reinforcer.

We can easily understand how deprivation of something can increase that “somethings” reinforcing value – and increase the behavior usually expressed to gain access to that reinforcer. But, MOs also work in the opposite way through *satiation*. If Johnny had found the box of Cocoa Puffs and had been sneaking handfuls of the tasty cereal in the hours before training, he would be quite full and the cereal would not hold the same reinforcing value for him as it had during states of deprivation. Therefore, he would not engage in the behaviors usually expressed to gain access to the cereal (or would not engage in them as frequently). This would set up a contingency in which learning and/or performance would be limited.

Food is an unlearned reinforcer that directly causes biological benefits, but what about those unlearned reinforcers that cause indirect biological benefits?

Think of reinforcers with indirect biological benefits as those that indicate the presence of something needed, such as seeing a box of Cocoa Puffs upon entering the training room. While seeing the box of cereal does not reinforce Johnny, it does indicate to Johnny that if he engages in behavior that has earned Cocoa Puffs in the past, it will be available to him under similar conditions (Malott & Shane, 2016).

Unlearned aversive stimuli cause biological harm. A dog’s bite, a fire’s burn, the presence of germs, etc., all cause biological harm (Malott & Shane, 2016).

Unlearned aversive stimuli that cause indirect biological harm are usually indicators that danger is possible.

* For example, a dog running toward you with teeth bared would indicate that a bite may be imminent and signal that you must work to escape that aversive stimulus.
* Standing next to a person in a checkout line at a grocery store who is coughing, sneezing, and blowing his nose indicates that germs may be present and you should probably go to another checkout line to escape exposure.

Seeing these indicators doesn’t cause biological harm, but they do indicate that harm may occur if steps aren’t taken to escape the danger. These unlearned aversive stimuli that cause indirect biological harm can allow the individual to take steps to avoid possible harm (Malott & Shane, 2016).

Now that we have an understanding of MOs, how can they be used in antecedent modifications?

As behavior analysts, we often modify the antecedents that are known to trigger unwanted behavior.

* For example, in an elementary school classroom, the teacher may assign desks strategically to keep two students who are constantly fighting apart. This prevents the possibility of the fighting.

We can utilize our understanding of MOs to increase the effectiveness of antecedent modifications.

* For example, if deprivation of an unlearned reinforcer increases a child’s unwanted behavior that has allowed her access to that reinforcer in the past, then making the reinforcer available to her in sufficient amounts (ensuring that the reinforcer is not presented when she is engaging in the behavior) should prevent the unwanted behavior by satiating her on the reinforcer.
* While we are on the subject of antecedent modifications, let’s briefly discuss three major types of antecedent interventions, i.e., non-contingent reinforcement (NCR); high-probability (high-p) response sequences, and Functional Communication Training (FCT).
	+ Non-contingent reinforcement (NCR) requires that you present a stimuli with known reinforcing value on a fixed-time (FT) or variable-time (VT) schedule –independent of the subject’s behavior. NCR may serve as an abolishing operation – reducing the motivation to engage in a specific unwanted behavior.
	+ High-probability (high-p) request sequences require the clinician to present 2-5 short tasks requests with which the subject has a history of compliance just prior to presenting a request with which the subject has a history of non-compliance (low-p request). This process has also been referred to as “behavioral momentum.”
	+ Functional Communication Training (FCT) uses a form of Differential Reinforcement of Alternative behavior (DRA) to reinforce an appropriate alternative communicative response from the unwanted behavior. FCT is an antecedent intervention package for establishing an appropriate communicative response that competes with unwanted behaviors that are brought about by a Motivating Operation (MO). Instead of modifying the value of a MO – as NCR and High-p request sequences, FCT develops alternative behaviors that are sensitive to the MOs that maintain the unwanted behavior.

Let’s consider the use of the Premack Principle – or, *Grandma’s Rule*.

Often, behavior analysts address non-compliance. There are just some things the client will not do. By identifying a highly preferred activity and making access to that activity contingent on completing a less preferred activity, you can often encourage compliance with the demand.

* For example, consider the 5-year-old who is highly repulsed by vegetables and refuses to eat them. The parent is worried that she is not getting the nutrients she needs for health. She knows that the child’s favorite desert is a hot fudge sundae, so the parent makes access to the sundae contingent on eating a few bites of the vegetable. It is a “first this – then that” contingency – and it works! Over time, the parent will require more bites to gain access to the sundae.

Thanks, Grandma!

Thank you for viewing your Unit 3 Lecture!

**References**

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

 New York, NY: Routledg*e*