

# Lecture 4

**Book: Behavior Modification- What it is and How to Do it**

**Chapter 4: Developing and Maintaining Behavior with Conditioned Reinforcement**

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## Summary

Unconditioned and conditioned reinforcers: Unconditioned reinforcers are stimuli that are reinforcing without prior learning or conditioning. They are also called primary or unlearned reinforcers. Examples include food for a hungry person, water for a thirsty person etc. other stimuli become reinforcers because of particular learning experiences. These stimuli called conditioned reinforcers are stimuli that were not originally reinforcing but have become reinforcers by being paired or associated with other reinforcers. They are also called secondary or learned reinforcers. Examples include praise, a picture of a loved one, books that we like to read, favorite tv programs etc. When a stimulus becomes a conditioned reinforcer through deliberate association with other reinforcers, other reinforcers are called backup reinforcers. For e.g. in the type of training conducted with dolphins, the trainer pairs the sound from a hand held clicker with the delivery of fish to a dolphin. A fish is a backup reinforcer and after a no. of pairings, the clicking sound becomes a conditioned reinforcer. Later, when teaching a dolphin to perform a trick, the sound of the clicker is presented as an immediate conditioned reinforcer and the clicker sound continues to be intermittently paired with fish.

- Tokens as conditioned reinforcers: Tokens are conditioned reinforcers that can be accumulated and exchanged for backup reinforcers. A behavior modification program in which individuals can earn tokens for specific behaviors and can cash in their tokens for backup reinforcers is called a token economy or a token system. For e.g. a kindergarten teacher might implement a token economy in which the children could earn gold stars for various behaviors, such as one star per child for playing cooperatively during recess and one star per correct answers given in class. At the end of the day, the children might be allowed to cash in their stars for backup reinforcers, such as five stars per child to play a computer game or three stars per child for the class to have an extra 5 mins. of story time.

- **Conditioned punishment:** Its principle is very similar to that of conditioned reinforcement. Just as a stimulus that is paired with reinforcement becomes reinforcing itself, so a stimulus that is paired with punishment becomes punishing itself. “No!” and “Stop that!” are examples of stimuli that become conditioned punishers because they are often followed by punishment if the individual continues to engage in the behavior that provoked them.

Factors influencing the effectiveness of conditioned reinforcement:

1. **The strength of backup reinforcers:** The reinforcing power of a conditioned reinforcer depends in part on the reinforcing power of the backup reinforcer on which it is based.
2. **The variety of backup reinforcers:** A conditioned reinforcer that is paired with a single backup reinforcer is called a simple conditioned reinforcer. In contrast, a stimulus that is paired with more than one kind of backup reinforcer is referred to as a generalized conditioned reinforcer. For e.g. money is a powerful generalized reinforcer for us because of its pairings with food, clothing, shelter, transportation, entertainment and other reinforcers. The reinforcing power of a conditioned reinforcer depends in part on the no. of different backup reinforcers available for it. If many different backup reinforcers are available, then at any given time, at least one of them will probably be strong enough to maintain tokens at a high reinforcing strength for any individual in the program.
3. **The no. of pairings with a backup reinforcer:** A conditioned reinforcer is likely to be stronger if it is paired with a backup reinforcer many times. For e.g. the expression “good girl” or “good boy” spoken to a very young child immediately following a desirable behavior is likely to be a stronger conditioned reinforcer if that expression has been paired with a hug from a parent many times as opposed to having been paired with a hug from a parent just once.
4. **Loss of value as a conditioned reinforcer:** For a conditioned reinforcer to remain effective, it must at least occasionally be associated with a suitable backup reinforcer.

Pitfalls of conditioned reinforcement:

- **Pitfall type 1:** People who are unfamiliar with the principle of conditioned reinforcement may unknowingly misapply it in various ways. One misapplication is the unknown pairing of conditioned reinforcers with stimuli that are meant to be punishing. An

example of this misapplication is when an adult frequently scolds a child for behaving inappropriately but never provides any type of backup punisher with the scolding, and the scolding is accompanied by other aspects of adult attention that are likely to have acquired conditioned reinforcing value because of previous pairings with reinforcers.

- Pitfall type 2: Ceasing to pair a conditioned reinforcer with a backup reinforcer can have unfortunate results for those who are not aware that this will cause a conditioned reinforcer to lose its value. An example is a teacher who awards stars as tokens for good behavior but fails to use effective backup reinforcers. The result is that the stars eventually lose whatever reinforcing power they may have had when they were first introduced.

Guidelines for the effective use of conditioned reinforcement:

- A conditioned reinforcer should be a stimulus that can be managed and administered easily in the situations in which you plan to use it.
- As much as possible, use the same conditioned reinforcers that the individual will encounter in the natural environment.
- In the early stages of establishing a conditioned reinforcer, a backup reinforcer should be presented as quickly as possible after the presentation of the conditioned reinforcer. Later, the delay between the conditioned reinforcer and the backup reinforcer can be increased gradually if desired.
- Use generalized conditioned reinforcers whenever possible, that is, use many different types of backup reinforcers, not just one. In this way, at least one of the backup reinforcers will probably be strong enough at any given time to maintain the power of the conditioned reinforcer.
- When the program involves more than one individual, avoid destructive competition for conditioned and backup reinforcers. Giving one person reinforcement to the disadvantage of another may evoke aggressive behavior in the second individual or cause that individual's desirable behavior to extinguish.