

# Lecture 5

**Book: Behavior Modification – What it is and How to do it**

## **Chapter 5: Decreasing a Behavior with Extinction**

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### **Summary**

Extinction: There are 2 types of extinction – operant and respondent. The principle of operant extinction states that if in a given situation, an individual emits a previously reinforced behavior and that behavior is not followed by a reinforcer, then that person is less likely to do the same thing again when next encountering a similar situation. It might take several repetitions of the behavior occurring and not being reinforced before any really obvious decrease in its frequency occurs.

Factors influencing the effectiveness of extinction:

- Controlling reinforcers for the behavior that is to be decreased: Reinforcers presented by other people or the physical environment can undo your good efforts at applying extinction. Unfortunately, it is often difficult to convince others of this if they are not familiar with the principles of positive reinforcement and extinction. For example, if several nursery school staff are ignoring a child's tantrum behavior and another staff member enters and gives the child a candy to make the child stop crying then the child is likely to stop crying at that moment. But in the long run, his crying may increase in frequency because of that reinforced trial. Because the child did stop crying temporarily, however, it would probably be difficult to convince that staff member of the importance of extinction.
- Extinction of a behavior combined with positive reinforcement for an alternative behavior: It is often impractical to reinforce a child every few seconds for engaging in some desirable behavior rather than disruptive behavior. It is possible, however, to begin with short intervals of desirable behavior and gradually increase them to longer, more manageable intervals. It is important that the increase in the requirement of the desirable

behavior be very gradual; otherwise, the undesirable behavior is likely to reoccur. Also, care must be taken not to present the reinforcer immediately after undesirable behavior (like crying) ceases because this would tend to reinforce the undesirable behavior, thereby increasing rather than reducing it. It is also important to ensure that the reinforcers that are being withheld are the ones that were actually maintaining the undesirable behavior. Failure to do this would technically not meet the definition of extinction, and the undesirable behavior would not likely decrease.

- The setting in which the extinction is carried out: It is important to consider the setting in which extinction will be carried out to minimize the influence of alternative reinforcers of the undesirable behavior to be extinguished and maximize the chances of the behavior modifier persisting with the program.
- Instructions – Use Rules: Although it is not necessary that an individual be able to talk about or understand extinction, it will probably help to speed up the decrease in behavior if the person is initially told something like this “each time you do X, then Y (the reinforcing item) will no longer occur.”
- Extinction is quicker after continuous reinforcement: Continuous reinforcement is an arrangement in which each instance of a particular response is reinforced. Intermittent reinforcement is an arrangement in which a response is reinforced only occasionally rather than every time it occurs. When a behavior has always been reinforced and then is never reinforced, behavior extinguishes quickly. When intermittent reinforcement has maintained a behavior, that behavior is likely to extinguish slowly. In general, behavior that has been intermittently reinforced extinguishes more slowly than behavior that has been continuously reinforced. Behavior that extinguishes slowly is said to be ‘resistant to extinction’.
- Behavior being extinguished may get worse before it gets better: During extinction behavior may increase before it begins to decrease. That is, things may get worse before they get better. An increase in responding during extinction is commonly referred to as an ‘extinction burst’. There are exceptional situations in which an extinction burst may be harmful. If you can anticipate that possibility, you might take preventive steps. For e.g. before implementing an extinction program to decrease head banging of a young girl with developmental disabilities, Brian Itawa and his colleagues put a helmet on the girl during extinction sessions so that she would not harm herself during an extinction burst.
- Extinction may produce aggression that interferes with the program: another difficulty of extinction is that the procedure may produce aggression. For e.g. if a teacher ignores a child’s finger snapping, the child might start snapping his or her fingers louder and louder and may perhaps start banging on the desk and yelling. This characteristic of extinction has been studied extensively in laboratory situations and has also been reported in applied research. It is important to minimize aggression not only because it is undesirable but also because it could lead to giving up too soon. This might not only reinforce the undesirable behavior on an intermittent schedule but also reinforce aggression.

- Extinguished behavior may reappear after a delay: The reappearance of an extinguished behavior following a rest is called ‘spontaneous recovery’. Typically, the amount of behavior that recovers spontaneously following a rest is less than the amount that occurred during the previous extinction session. After several additional extinction sessions, spontaneous recovery is usually not a problem. It is highly recommended that the teacher be prepared to continue with the extinction program despite the occurrence of spontaneous recovery.

Pitfalls of extinction:

Pitfall type 1: As with many natural laws, the principle of extinction operates whether or not we are aware of it. Unfortunately, those who are not aware of extinction are apt to apply it unknowingly to the desirable behavior of friends, acquaintances, family and others.

Pitfall type 2: even when some individuals are knowledgeably applying behavior modification in an effort to help behaviorally deficient individuals, others who are less knowledgeable about extinction may undo their good work.

Guidelines for the effective application of extinction:

1. Selecting the behavior to be decreased: In choosing a behavior, be specific. For e.g. try not to extinguish all the trouble making behaviors of a child but rather focus on one problem area such as “finger snapping”. It is also important to remember that behavior often gets worse before getting better and that aggressive behavior sometimes is produced during the extinction process. For e.g. be very careful if the target behavior is destructive to the individual or others and whether it will be harmful to persist in the extinction program if the behavior gets worse. Lastly, we should select a behavior for which we can control the reinforcers that are currently maintaining it.
2. Preliminary considerations:
  - If possible keep track of how often the target behavior occurs prior to your extinction program. During the recording phase, do not attempt to withhold the reinforcer for the undesirable behavior.
  - Try to identify what is currently reinforcing the undesirable behavior so that you can withhold the reinforcer during treatment.
  - Identify some desirable alternative behavior in which the individual can engage.
  - Identify effective reinforcers that can be used for desirable alternative behavior by the individual.
  - Try to select a setting in which extinction can be carried out successfully.
  - Be sure that all relevant individuals know before the program starts just which behavior is being extinguished and which behavior is being reinforced.
3. Implementing the plan:
  - Tell the individual about the plan before starting.

- After initiating the program, be completely consistent in withholding reinforcement after all instances of the undesirable behavior and reinforcing the desirable alternative behavior.
4. Weaning the student from the program
- After the undesirable behavior has decreased to zero, occasional relapses may occur, so be prepared.
  - Three possible reasons for the failure of the extinction procedure are:
    - (1) The attention you are withholding following the undesirable behavior is not the reinforcer that was maintaining the behavior.
    - (2) The undesirable behavior is receiving intermittent reinforcement from another source.
    - (3) The desired alternative behavior has not been strengthened sufficiently.