

Lecture 10

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

Chapter 10 : Getting a New Behavior to Occur with Shaping

Dr. Deae Young Jung

(Changwon National University, South Korea)

Summary

Shaping: It can be defined as the development of a new behavior by the reinforcement of successive approximations of that behavior and the extinction of earlier approximations of that behavior until the new behavior occurs. Shaping is sometimes called the ‘method of successive approximations’. The behaviors that an individual acquires during a lifetime develop from a variety of sources and influences. Sometimes a new behavior develops when an individual performs some initial behavior and the environment then reinforces slight variations in that behavior across a no. of trials. Eventually, that initial behavior may be shaped so that the final form no longer resembles it. For example, most parents use shaping in teaching their children to talk. E.g. a baby receiving large doses of reinforcement like hugs, kisses, smiles when uttering his initial words.

The five aspects of behavior that can be shaped are topography, frequency, duration, latency and intensity/force. Topography is the spatial configuration or form of a particular response. Printing a word and writing the same word are examples of the same response made with two different topographies. Topography shaping occurs, for e.g. when teaching a child to switch from a printing response to a writing response. Frequency of behavior is the number of instances that occur in a given period of time. E.g. of frequency shaping include increasing the no. of steps in a person’s exercise program. The duration of a response is the length of time that it lasts. E.g. of duration shaping include lengthening the time spent studying before taking a break. Latency is the time between the occurrence of a stimulus and the response evoked by that stimulus. It is also known as reaction time. E.g. in a quiz contest, the time from the presentation of the host’s verbal stimulus until a contestant presses a button is the contestant’s latency of responding to that particular stimulus. The intensity or force of a response refers to the physical effect the response has or potentially has on the environment. For e.g. If a water pump is rusted and applying regular force is no longer reinforced by the flow of water, the person will likely apply a little more force to get the reinforcement. Over several months, the person’s behavior is gradually shaped so that he presses very hard on the first trial, a terminal behavior quite different from the initial behavior.

Factors influencing the effectiveness of shaping:

- Specifying the final desired behavior: The first stage in shaping is to identify clearly the final desired behavior, often referred to as the target behavior. The final desired behavior should be stated in such a way that all of the relevant characteristics of the behavior like its topography, amount, latency and intensity are identified. In addition, the conditions under which the behavior is or is not to occur should be stated and any other guidelines that appear to be necessary for consistency should be provided.
- Choosing a starting behavior: Because the final desired or target behavior does not occur initially and because it is necessary to reinforce some behavior that approximates it, we must identify a starting behavior. This should be a behavior that occurs often enough to be reinforced within the session time, and it should approximate the final desired behavior. In a shaping program, it is crucial to know not only where you are going (the target behavior) but also the level at which the individual is currently performing. The purpose of the shaping program is to get from one to the other by reinforcing successive approximations from the starting point to the final desired behavior even though they might be very dissimilar.
- Choosing the shaping steps: Before initiating the shaping program it is helpful to outline the successive approximation through which the person will be moved in the attempt to approximate the final desired behavior. To begin, reinforcement is given on a no. of occasions for emitting the initial behavior. When this behavior is occurring repetitively, the trainer moves to step 2 and reinforces that approximation for several trials. This step by step procedure continues until the child finally reaches the satisfactory behavior.
- Moving along at the correct pace: There are several rules to follow in reinforcing successive approximations of a final desired response:
 - Reinforce an approximation at least several times before proceeding to the next step. In other words, avoid under reinforcement of a shaping step. Trying to go to a new step before the previous approximation has been well established can result in losing the previous approximation through extinction without achieving the new approximation.
 - Avoid reinforcing too many times at any shaping step. It is also important not to progress too slowly. If one approximation is reinforced for so long that it becomes extremely strong, new approximations are less likely to appear.
 - If you choose a behavior because you are moving too fast or taking too large a step, return to an earlier approximation where you can pick up the behavior again.

Pitfalls of shaping: Shaping operates whether we are aware of it or not. Unfortunately, those who are not aware of shaping may unknowingly apply it to develop undesirable behavior of friends, acquaintances, family members and others. Many undesirable behaviors commonly seen in children with special needs for e.g. violent temper tantrums, constant fidgeting, injuring other children, voluntary vomiting are often products of the inadvertent application of shaping.

Furthermore, it is possible that there are individuals with intellectual disabilities or autism whose deficiency exists not because of any genetic or physical defect but simply because they were never exposed to effective shaping procedures. Another type of pitfall is the failure to apply shaping to develop desirable behavior. Some parents, for e.g., may not be responsive enough to their child's babbling behavior. Perhaps they expect too much at the beginning and do not reinforce extremely remote approximations of normal speech.

Guidelines for the effective application of shaping:

1. Select the target behavior:
 - i) Choose a specific behavior rather than a general category. Shaping is appropriate for changing amount, latency and intensity of behavior, as well as for developing new behavior of a different topography (form). If the target behavior is a complex sequence of activities such as making a bed, that can be broken down into sequential steps, and if the program amounts to linking the steps together in a particular order, it is not a shaping program. Rather the target behavior needs to be developed by chaining.
2. Select an appropriate reinforcer.
3. The initial plan
 - (a) List successive approximations to the target behavior, beginning with the starting behavior. To choose the starting behavior, find a behavior already in the learner's repertoire that resembles the target behavior most closely and that occurs at least once during an observation period.
 - (b) Your initial steps or successive approximations are usually "educated guesses". During our program, we can modify these according to the learner's performance.
4. Implementing the plan
 - i) Tell the learner about the plan before starting.
 - ii) Begin reinforcing immediately following each occurrence of the starting behavior.
 - iii) Never move to a new approximation until the learner has mastered the previous one.
 - iv) If you are not sure when to move the learner to a new approximation, utilize the following rule. Move to the next step when the learner performs the current step correctly in 6 of 10 trials, usually with 1 or 2 trials less perfect than desired and one or two trials in which the behavior is better than the current step.
 - v) Do not reinforce too many times at any one step, and avoid under reinforcement at any one step.
 - vi) If the learner stops working, you may have moved up the steps too quickly, the steps may not be the right size, or the reinforcer may be ineffective.
 - (1) First, check the effectiveness of the reinforcer.

- (2) If the learner becomes inattentive or shows signs of boredom, the steps may be too small.
- (3) Inattention or boredom may also mean you have progressed too rapidly. If so, return to the previous step for a few more trials and then try the present step again.
- (4) If the learner continues to have difficulty, despite training at previous steps, add more steps at the point of difficulty.