

Gorilla Training



Objectives

The student will define cognitive learning, behavioral shaping, and operant conditioning. The student will conduct an experiment using behavioral shaping and record the progress of cognitive learning.

Materials

- copy of blank Symbol Dictionary
- completed Symbol Dictionary
- 2 pencils
- 1 medium bag of M&Ms, a piece of banana, apple, or other fruit
- Observation Records sheet
- construction paper and scissors

Background

David Premack, a well-known behaviorist conducted studies of language acquisition and cognitive abilities in chimpanzees using simple plastic symbols to represent words. Rewarding correct responses with treats, he used behavioral shaping to teach subjects associations between symbols and objects or concepts and actions. Teaching symbolic language is very difficult without a shared language such as English. These studies help scientists to understand how animal minds work, which is helpful in understanding many other components about animal life.

Overview

This activity is for students who have a working knowledge of behavior. In this activity, students will be placed in groups of three. One student will be “observer”, one will be “trainer”, and one will be the gorilla or “subject.” While the subjects are out of the room, the trainer and observer will construct an action command using a dictionary of terms (see Symbol Dictionary provided). When the subject enters, the trainer and observer will train the subject to complete the action command.

Preparation

Cut the nine designated shapes (as shown on the Symbol Dictionary) from construction paper. Cut enough so that each group has one set.

*****Suggested steps for the trainer during the training session

Place the representative symbols for “Pick up the fruit” on the table or desk before your subject enters the room. Place a pile of M&Ms by the subject. If they attempt to take one, gently remove their hand. The M&Ms are used to reinforce the subject's correct answers and must be earned.

Teach the symbol for fruit by handing the subject the correct symbol for the fruit, then by taking it away and placing the fruit in their hand. This will allow the subject to correlate the shape with the fruit.

Remove the fruit from their hand and lay it aside. Repeat this exercise with the observer while the subject watches. The observer should then demonstrate what the action command tells them to do. Trainer should then reward observer with an M&M.

For every incorrect action, take away and M&M from their pile. When correct, reward them with an M&M in their hand.

Try different training techniques until subject understands. Repeat for each new sentence (from the Symbol Dictionary).

(Note: This is just one method for training this command. Students may choose another options to train the subject while staying within the experiment's rules.)



Action

1. Divide students into groups of three. Within each group, students choose roles of observer, subject, or trainer (one in each group).
2. Define cognitive learning as when an animal thinks about something instead of reacting to a stimulus. Behavioral shaping is a step-by-step process in which incremental progress is reinforced toward the final goal or terminal response. For example, a gorilla has been trained to present its finger when you hold your hand up, but now you would like the gorilla to stand up. To shape behavior, you could slowly move the target (your hand) higher and higher, making the gorilla stand up in order to reach your hand. Define operant conditioning as when an animal learns to operate in its environment in order to attain reinforcement, in this case, positive reinforcement. Through operant conditioning, a gorilla can be reinforced for understanding the action command you have given.
3. After defining these terms, ask the subjects in each group to leave the room. They are not to have any knowledge of the purpose and nature of this experiment.
4. Explain the trainer's and observer's roles. The trainer will train, reward, and test the subject in the artificial language (see steps for the trainer for exact procedure).
5. The observer will enforce the no talking policy, assist the trainer in demonstrations to the subject, monitor the trainer to ensure there is no signaling, and record the results.
6. Remind students there is **NO TALKING, POINTING, OR GESTURING** during the activity. Using the Symbol Dictionary, ask the observer and trainer to construct the action command: "Pick up the fruit." Each word of the action command corresponds to a shape in the symbol dictionary. The observer/trainer are to place the corresponding shapes of the action command on the table. The fruit should also be available.
7. Allow the subjects to enter the room and sit across from an observer/trainer team.
8. The observer should record all training methods used and the results. The observer should note the sentence, how the trainer tried to teach the sentence, if the subject responded and how, and problems the subject and trainer encountered. Later, all students will write a brief report about this activity depending on their perspective.
9. The trainer and observer should also use the following symbols to communicate with each other as not to speak during the session.

repeat the action: hold up two fingers

do not use cueing: hand on top of head

stop the session/action: hand at throat



Recorded Observations Worksheet

SAMPLE:PICK FRUIT UP.

Method: Pointed to fruit, then trainer picked up fruit. After completed behavior, trainer took an M&M.

Correct Attempts

Incorrect Attempts

II

III

Time Length: 35 minutes (from the beginning of training to when the subject understood the symbol sentence.)

Observer Notes:

Subject was confused until trainer showed by example. Trainer then gave subject M&M when subject seemed to begin to grasp the idea. Subject responded well to reinforcement of M&M.

1. PICK FRUIT UP.

Method:

Correct Attempts

Incorrect Attempts

Time Length:

Observer Notes:

2. TAKE FRUIT.

Method:

Correct Attempts

Incorrect Attempts

Time Length:



Observer Notes:

3. GIVE FRUIT TO TRAINER.

Method:

Correct Attempts

Incorrect Attempts

Time Length:

Observer Notes:

4. TAKE FRUIT AND GIVE TO TRAINER.

Method:

Correct Attempts

Incorrect Attempts

Time Length:

Observer Notes:



Symbol Dictionary

1. PICK



FRUIT



UP



2. TAKE



FRUIT



3. GIVE



FRUIT



TO



TRAINER



4. TAKE



FRUIT



AND



GIVE



TO



TRAINER

