

Instrumental conditioning

Experience, Human Nature



When one hears the term instrumental (operant) conditioning they tend to immediately think of the "Skinner-Box". Skinner conducted classic experiments where he trained rats and pigeons to press a lever in order to obtain a food reward. The experimenter would choose a suited output to pair it with a consequence. After a training period, the animals would show the behavior (BH, e. g. pressing the lever) even in absence of any reward, if the BH-US association had been memorized. Instrumental conditioning differs from classical conditioning in that it operates on the environment and refers to the modification of voluntary behavior.

For the purposes of this paper I will evaluate the application of instrumental conditioning to learning how to use the toilet (potty-training). I will describe the process of potty-training, and compare and contrast the concepts of positive and negative reinforcement as they relate to potty-training. I will explain the role of reward and punishment in potty-training as well as explain which form of instrumental conditioning would be most effective in potty-training. What is Instrumental Conditioning?

"Instrumental conditioning is a process by which humans and animals learn to behave in such a way as to obtain rewards and avoid punishments. It is also the name for the paradigm in experimental psychology by which such learning and action selection processes are studied" (Staddon & Cerutti, 2003). All behavior is guided by consequences. Dogs beg/perform tricks for treats; politicians study poll results in order to steer the directions of their campaigns. Instrumental conditioning similarly is goal-oriented behavior. The selecting consequences that guide operant conditioning are of two kinds: behavior-enhancing (reinforcers) and behavior-suppressing (punishers).

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The most important factor in instrumental conditioning is the consequence of the response. " Responding often seems to be under exquisite control of the reinforcement conditions: Larger and tastier rewards provoke more vigorous response, delayed rewards weaken responding, and satiation of drive leads to a reduction in responding" (Terry, 2009). This consequence takes place because of an arranged contingency (relationship) between the occurrence of the response and the delivery of the reinforcer. The response is " instrumental" in acquiring the reinforcer, which is the reason this type of conditioning is referred to as instrumental conditioning. The response in turn " operates" on the environment causing a kind of change which is why it is also known as operant conditioning.

Instrumental Conditioning and Potty-Training

The Process of Potty-Training. Potty-training---the process of training a young child to use the toilet. Children typically begin to exhibit signs of readiness between the ages of 12 to 18 months and the process is usually fully completed by the time the child reaches 4 years old. Generally it takes longer to learn to stay dry during the night, however most children have mastered this by age 4. Cultural factors also play a role in determining the appropriate age of readiness for potty-training, with Americans usually beginning training later than other cultures (Paul, 2008).

Potty-training is a mutual activity requiring cooperation, understanding and agreement between the child and the caregiver. The best methods emphasize consistency and positive reinforcement (over punishment) in order to make it a pleasant experience for the child. Research suggests that

around 18 months old is the ideal time to start training due to the child's eagerness to please his/her parents.

Positive and Negative Reinforcement. Positive reinforcement refers to the presence of a response-to-reinforcer relationship. " In positive reinforcement, the reinforcer is contingent on performance of the instrumental response" (Terry, 2009). Each action is followed by an outcome or consequence.

Negative reinforcement involves particular behaviors being strengthened (increased) by the consequence of stopping or avoiding a negative condition. It is often confused with punishment, but they are very different. Negative reinforcement strengthens behavior whereas punishment weakens (decreases) behavior because a negative condition is introduced as a consequence of the behavior. For example, driving in rush hour traffic is a negative condition for most people. One day they decide to leave home a little earlier, and avoid running into the heavy traffic. They leave home at the same time the next day and again avoid heavy traffic. Their behavior of leaving home earlier is strengthened by the consequence of the avoidance of heavy traffic.

Positive and Negative Reinforcement as they Relate to Potty-Training.

According to Terry (2009) when teaching our children we most often tell them the rules between behaviors and consequences. In some instances the contingencies are simply left for the subject (child) to discover on his/her own. In potty-training, the child must discover what response is necessary to stay dry and receive a reward.

Positive reinforcement is the basic practice of rewarding a child for displaying a desired behavior, such as using the potty. The most successful method is to find what your particular child likes most of all, which for the majority of children is either a treat or a toy. When your child acts as desired you use positive reinforcement by rewarding him or her with this highly preferred item as close to the behavior as possible. Add in praise and positive reinforcement has been achieved. The main reason positive reinforcement works so well for potty-training is the way in which a child learns-- through association.

In contrast, children are not in a rush to move from diapers to using the potty on their own. New behaviors are seldom if ever, accomplished perfectly the first few times. During this time there will be mistakes. That is what learning is all about. When negative reinforcement is used for mistakes then the child learns that new growth experiences should be avoided at all costs, no matter what the new growth opportunity is. Negative reinforcement will likely cause negative outcomes not only in potty training, but in the way the child grasps future experiences. The Role of Reward and Punishment in Potty-Training

Rewards. There are many different types of rewards that can be used to motivate toddlers to potty-train. What is most important is that the reward be given immediately following any successful attempt to use a potty. The best rewards are verbal praise, however some may wish to use a small treat as a reward. Positively responding to the child's achievement shows the child that you approve and support them. Positive attention increases the chance

of the child repeating the behavior. Rewards and verbal praise should be easy, quick, and inexpensive. Rewards should be given immediately, are not used in place of praise (social reinforcement), used specially for potty-training and not made available any other time, given for the tasks the child can already manage. As the child is managing new skills, praise should be continued and other types of rewards gradually reduced.

Punishments. Punishment should not be used if a child has an accident. Some children become upset and frustrated while potty-training so it may help to use clever phrases like " That silly pee pee just wouldn't wait for the potty, let's see if we can catch it the next time". Caregivers should remain calm and relaxed rather than punitive when potty-training because it is supposed to be a fun and educational experience.

In my own quest to potty-train my children, I have found positive reinforcement to be the most effective training method. The times I got upset and showed anger in response to accidents only served to frighten them and discourage them from trying again. The Most Effective Form of Instrumental Conditioning in Potty-Training

In my opinion, the most effective form of instrumental conditioning in potty-training is the use of positive reinforcement so that the child learns to generalize his/her behavior across situations. Positive reinforcement gives the child the courage and confidence s/he needs to be able to use the potty not only in the home/caregiver setting, but in other places as well, thus generalizing his/her behavior. " The potential strengthening effects of a reinforcer are usually confounded with its reward or incentive effects, both of

which lead to improved performance" (Terry, 2009). In other words, the more positive and frequent the praise (and other rewards), the more likely the child is to repeat the desired behavior. Conclusion

Instrumental conditioning is dependent on people to act upon their environment and their behavior is subsequently shaped by the response their behavior solicits. Those responses that evoke an increased state of satisfaction are generally repeated as opposed to responses that render a person dissatisfied are likely to decrease. A vital factor in instrumental conditioning is the concept of positive and negative reinforcement. In potty-training a child, the use of positive reinforcement is the most highly effective form of motivation as it increases the likelihood of them repeating desired behavior.

In closing, I have evaluated the application of instrumental conditioning to learning how to use the toilet (potty-training). I have described the process of potty-training, and compared and contrasted the concepts of positive and negative reinforcement as they relate to potty-training. I have explained the role of reward and punishment in potty-training as well as explained which form of instrumental conditioning would be most effective in potty-training.