Overview of Operant Conditioning: Part 1 (Video 3)

Slide 1	Hello, and welcome to an overview of operant conditioning, a behavioral learning theory. This is the third in a series of six presentations on behavioral learning theories as they apply to schooling and education. My name is Bill Huitt and I am professor emeritus at Valdosta State University and adjunct faculty at Capella and Walden Universities.
Slide 2	There are two primary objectives for this presentation. First, after viewing the presentation you will be able to name and describe the basic model of operant conditioning and, second, you will be able to name and describe the components of the operant conditioning model.
Slide 3	As discussed in the overview, all behavioral theories consider the organism as a black box. By organisms, behaviorists mean animals and they consider human beings to belong to that category. Their proposal is that there is a direct connection between environmental stimuli and animal behavior and the laws of behavior are universally applicable to all animals.
Slide 4	Also, remember that classical conditioning involves studying those stimuli that will elicit or activate an involuntary behavior that already exists within the organism
Slide 5	while the focus of operant conditioning is on voluntary behavior and the impact that environmental stimuli, labeled consequences, have on the increase or decrease in the frequency of a specific target behavior.
Slide 6	Operant conditioning reflects a three-term model.
Slide 7	It starts with a voluntary behavior emitted by the organism.
Slide 8	That is followed by a stimulus, labeled a consequence, when it changes the probability that the target behavior occurs again. That is, the frequency of the target behavior or response must either increase or decrease as a result of its being followed by a stimulus. Otherwise, that stimulus is not labeled a consequence.

Slide 9	A stimulus that follows a response but does not change the probability that the response will occur again is labeled a neutral stimulus. It is important to understand that the label that should be applied to stimuli is not known until after the change in behavior has occurred. We will return to this issue latter in the presentation.
Slide 10	An antecedent stimulus is a stimulus that signals that the next target response will be followed by a consequence. It does not actually change the frequency of the response. It merely signals that a consequence will follow the emitting of the next target behavior. For example, as a child my mother always referred to me as Bill or Billy. When she said "William Gregory" that meant that I needed to stop an undesired behavior immediately. Perhaps that is why parents give children middle names; it provides mothers with an antecedent stimulus to let their children know when they have had enough.
Slide 11	When the presentation of an antecedent stimulus actually results in a change of behavior, the technical term that is used is discriminative stimulus. That is, the organism is able to discriminate between the stimulus that is a signal that a consequence is coming and one that is not a signal.
Slide 12	There are three major theorists responsible for the initial development and the elaboration of operant conditioning. The first was Edward Thorndike who lived between 1874 and 1949. He was responsible for developing the Law of Effect that states that under certain conditions a stimulus following a behavior will increase or decrease the tendency for that behavior to occur again.
Slide 13	This concept was developed further by John Watson who lived between 1878 and 1958. Watson's famous statement was "Give me a dozen healthy infants, well-formed and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select: doctor, lawyer, artist, merchant chief and, yes, even beggar man and a thief, regardless of his talents, penchants, tendencies, abilities, vocations, and the race of his ancestors." While most operant conditioning theorists might not take the statement at face value, there is a tendency for operant conditioning theorists to focus on conditions in the environment that explain behavior.
Slide 14	The third, and definitely the most influential of the operant conditioning theorists, is B. F. Skinner who lived between 1904 and 1990. He is considered one of the very first American psychologists as those before him had obtained much, if not all, of their training in Europe.

Slide 15	The behavioral approach to learning, especially operant conditioning, in all of its forms, was the dominant learning paradigm in the USA from the 1930s through the 1950s. it was initially replaced by humanism and cognitive processing theories. Even today it is quite often the standard by which other theories are compared when discussing the efficacy of a new learning theory.
Slide 16	The first step in using operant conditioning is to identify a target behavior, as well as a behavior that the organism is already emitting that can be modified. For example, if a teacher wants a student to raise his hand before speaking, any movement of a hand would be the initial behavior that would be modified into raising a hand behavior.
Slide 17	The next step is to identify possible consequences. There are two types:
Slide 18	positive, which is sometimes referred to as pleasant,
Slide 19	and negative, which is sometimes labeled aversive. As previously stated, it is not known exactly how any particular stimulus will be labeled after it is presented to the organism (that is the learner). It is simply a best guess at this point.
Slide 20	Despite investigators' knowledge of the learner, it is possible to be wrong in the initial labeling of a stimulus.
Slide 21	For example, food, money, and hanging out with friends might all be considered as positive consequences. However, the learner might be lactose intolerant which would make eating the ice cream a potentially negative stimulus. Likewise, offering money in a particular situation might be either neutral if the person does not need money or it is not enough to change a behavior or perhaps might even be negative. For example, after first date a young man says, "I really had a good time I'd like to see you again," and hands the young woman $10. In that situation, the money would very likely be labeled as a negative stimulus. The same might be true of socializing. For a strong introvert, being invited to meet new people could easily be labeled as a negative stimulus.
Slide 22	The point is that the label given the stimulus, either a positive or negative consequence or a neutral stimulus, is only legitimately made after observing behavior. That is, from the perspective of operant conditioning theory, a stimulus is either a consequence (that is, the probability of the target behavior occurring changes after it has been added or subtracted from the learner's environment)

Slide 23	or it is a neutral stimulus when adding or subtracting the stimulus does not change the probability of it occurring again. In this sense, operant conditioning always works. Either the behavior changes after the application of the stimulus in which case the stimulus is labeled a consequence or it does not in which case the stimulus is labeled a neutral stimulus. If behavior changes then operant conditioning was used; if behavior does not change, then operant conditioning was not used.
Slide 24	There are two actions that can be taken with a stimulus:
Slide 25	it could be added to the learner's environment
Slide 26	or it could be subtracted or taken away.
Slide 27	Finally, there are two results that can be achieved by adding or subtracting the positive or negative stimulus.
Slide 28	It can result in an increase in the probability that the emitted behavior will occur again
Slide 29	or it can result in a decrease in that probability.
Slide 30	To summarize. There are five components to using operant conditioning.
Slide 31	First, one must identify a target behavior that will be the focus of conditioning.
Slide 32	Second, the investigator must decide whether that target behavior will be increased from this present base rate or whether it will be decreased.
Slide 33	Third, the investigator must select a stimulus that will be used to modify the emitted behavior.
Slide 34	Fourth, the investigator must add or subtract that stimulus after the behavior has been emitted.
Slide 35	Finally, the result must be observed to see if the intentions have, in fact, been met, or at least are moving in that direction.

Slide 36	There are four major operant conditioning techniques that result from identifying the purpose of the behavior change (that is, to state whether the target behavior should be increased
Slide 37	or decreased):
Slide 38	selecting a stimulus, either a stimulus that is thought to be positive or pleasant or
Slide 39	one that is thought to be negative or aversive
Slide 40	Next an action is selected; that is, to add a pleasant or positive stimulus, in which case the technique of positive reinforcement is considered to have been used to increase the frequency of a target behavior, or
Slide 41	add a negative or aversive stimulus, in which case the technique of punishment is considered to have been used to decrease the target behavior.
Slide 42	Likewise, a negative or aversive stimulus could be subtracted, in which case the technique of negative reinforcement is considered to have been used to increase the frequency of a target behavior, or
Slide 43	a pleasant or positive stimulus can be subtracted in which case the technique of response cost is considered to have been used to decrease the frequency of the target behavior.
Slide 44	In general, it is always best to use positive reinforcement, if possible. That is, look for a behavior that you want the learner to increase in frequency and add a pleasant stimulus after the target behavior has been emitted or an approximation of that behavior has been emitted.
Slide 45	If the learner will not emit a behavior that could be positively reinforced, the next best alternative is to place the learner in the situation that a negative stimulus can be subtracted when the learner emits a response that approximates the desired behavior.
Slide 46	While it is generally best to focus on increasing desired behaviors, it is sometimes necessary to focus on decreasing inappropriate behaviors. In that case, it is best to first subtract a pleasant stimulus from the learner's environment and then add it back when the learner behaves in a more appropriate manner.

Slide 47	Finally, there are times when a behavior is detrimental to the self or others and punishment is warranted. However, the punishment should be done in a way that the negative stimulus that has been added to decrease inappropriate behavior
Slide 48	can be subtracted when the learner behaves in a more appropriate manner. Once that occurs then a pleasant stimulus can be added to increase the likelihood that the appropriate behavior will increase in frequency.
Slide 49	This presentation's focus was on an overview of operant conditioning. Two previous presentations focused on an overview of behavioral theories and classical conditioning. Two additional presentations will continue the discussion of operant conditioning. The presentations on behavioral learning theories will be completed with a discussion of behavior modification techniques. In addition to the six presentations related to the behavioral learning theories, there are several short quizzes that learners can use to check their understandings of the different learning theories.

Developed by: William G. Huitt, Educational Psychology Interactive
Last revised: January 2013