

Classical conditioning and behavior assignment

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Behaviorism Summary: Behaviorism is a worldview that operates on a principle of “ stimulus-response. ” All behavior caused by external stimuli (operant conditioning). All behavior can be explained without the need to consider internal mental states or consciousness. Originators and important contributors: John B. Watson, Ivan Pavlov, B. F. Skinner, E. L. Thorndike (connectionism), Bandura, Tolman (moving toward cognitivism) Keywords: Classical conditioning (Pavlov), Operant conditioning (Skinner), Stimulus-response (S-R) Behaviorism Behaviorism is a worldview that assumes a learner is essentially passive, responding to environmental stimuli.

The learner starts off as a clean slate (i. e. tabula rasa) and behavior is shaped through positive reinforcement or negative reinforcement. Both positive reinforcement and negative reinforcement increase the probability that the antecedent behavior will happen again. In contrast, punishment (both positive and negative) decreases the likelihood that the antecedent behavior will happen again. Positive indicates the application of a stimulus; Negative indicates the withholding of a stimulus. Learning is therefore defined as a change in behavior in the learner. Lots of (early) behaviorist work was done with animals (e. . Pavlov’s dogs) and generalized to humans. Behaviorism precedes the cognitivist worldview. It rejects structuralism and is an extension of Logical Positivism. Classical Conditioning (Ivan Pavlov) Several types of learning exist. The most basic form is associative learning, i. e. , making a new association between events in the environment. There are two forms of associative learning: classical conditioning (made famous by Ivan Pavlov’s experiments with dogs) and operant conditioning. Pavlov’s

Dogs In the early twentieth century, Russian physiologist Ivan Pavlov did Nobel prize-winning work on digestion.

While studying the role of saliva in dogs' digestive processes, he stumbled upon a phenomenon he labeled " psychic reflexes. " While an accidental discovery, he had the foresight to see the importance of it. Pavlov's dogs, restrained in an experimental chamber, were presented with meat powder and they had their saliva collected via a surgically implanted tube in their saliva glands. Over time, he noticed that his dogs who begin salivation before the meat powder was even presented, whether it was by the presence of the handler or merely by a clicking noise produced by the device that distributed the meat powder.

Fascinated by this finding, Pavlov paired the meat powder with various stimuli such as the ringing of a bell. After the meat powder and bell (auditory stimulus) were presented together several times, the bell was used alone. Pavlov's dogs, as predicted, responded by salivating to the sound of the bell (without the food). The bell began as a neutral stimulus (i. e. the bell itself did not produce the dogs' salivation). However, by pairing the bell with the stimulus that did produce the salivation response, the bell was able to acquire the ability to trigger the salivation response.

Pavlov therefore demonstrated how stimulus-response bonds (which some consider as the basic building blocks of learning) are formed. He dedicated much of the rest of his career further exploring this finding. In technical terms, the meat powder is considered an unconditioned stimulus (UCS) and the dog's salivation is the unconditioned response (UCR). The bell is a

neutral stimulus until the dog learns to associate the bell with food. Then the bell becomes a conditioned stimulus (CS) which produces the conditioned response (CR) of salivation after repeated pairings between the bell and food. John B.

Watson further extended Pavlov's work and applied it to human beings. In 1921, Watson studied Albert, an 11 month old infant child. The goal of the study was to condition Albert to become afraid of a white rat by pairing the white rat with a very loud, jarring noise (UCS). At first, Albert showed no sign of fear when he was presented with rats, but once the rat was repeatedly paired with the loud noise (UCS), Albert developed a fear of rats. It could be said that the loud noise (UCS) induced fear (UCR). The implications of Watson's experiment suggested that classical conditioning could cause some phobias in humans.

Social Learning Theory [ref: Ormrod, J. E. (1999). Human learning (3rd ed.). Upper Saddle River, NJ: Prentice-Hall.] Social learning theory focuses on the learning that occurs within a social context. It considers that people learn from one another, including such concepts as observational learning, imitation, and modeling. Among others Albert Bandura is considered the leading proponent of this theory. General principles of social learning theory follows: 1. People can learn by observing the behavior is of others and the outcomes of those behaviors. 2. Learning can occur without a change in behavior.

Behaviorists say that learning has to be represented by a permanent change in behavior, in contrast social learning theorists say that because people can

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learn through observation alone, their learning may not necessarily be shown in their performance. Learning may or may not result in a behavior change. 3. Cognition plays a role in learning. Over the last 30 years social learning theory has become increasingly cognitive in its interpretation of human learning. Awareness and expectations of future reinforcements or punishments can have a major effect on the behaviors that people exhibit. . Social learning theory can be considered a bridge or a transition between behaviorist learning theories and cognitive learning theories. How the environment reinforces and punishes modeling: People are often reinforced for modeling the behavior of others. Bandura suggested that the environment also reinforces modeling. This is in several possible ways: 1, The observer is reinforced by the model. For example a student who changes dress to fit in with a certain group of students has a strong likelihood of being accepted and thus reinforced by that group. . The observer is reinforced by a third person. The observer might be modeling the actions of someone else, for example, an outstanding class leader or student. The teacher notices this and compliments and praises the observer for modeling such behavior thus reinforcing that behavior. 3. The imitated behavior itself leads to reinforcing consequences. Many behaviors that we learn from others produce satisfying or reinforcing results. For example, a student in my multimedia class could observe how the extra work a classmate does is fun. This student in turn would do the same extra work and also receive enjoyment. 4. Consequences of the model's behavior affect the observers behavior vicariously. This is known as vicarious reinforcement. This is where in the model is reinforced for a response and then the observer shows an

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increase in that same response. Bandura illustrated this by having students watch a film of a model hitting a inflated clown doll. One group of children saw the model being praised for such action. Without being reinforced, the group of children began to also hit the doll .

Contemporary social learning perspective of reinforcement and punishment:

1. Contemporary theory proposes that both reinforcement and punishment have indirect effects on learning. They are not the sole or main cause. 2.

Reinforcement and punishment influence the extent to which an individual exhibits a behavior that has been learned. 3. The expectation of reinforcement influences cognitive processes that promote learning.

Therefore attention plays a critical role in learning. And attention is influenced by the expectation of reinforcement.

An example would be, where the teacher tells a group of students that what they will study next is not on the test. Students will not pay attention, because they do not expect to know the information for a test. Cognitive factors in social learning: Social learning theory has cognitive factors as well as behaviorist factors (actually operant factors). 1. Learning without performance: Bandura makes a distinction between learning through observation and the actual imitation of what has been learned. 2. Cognitive processing during learning: Social learning theorists contend that attention is a critical factor in learning. 3.

Expectations: As a result of being reinforced, people form expectations about the consequences that future behaviors are likely to bring. They expect certain behaviors to bring reinforcements and others to bring punishment.

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The learner needs to be aware however, of the response reinforcements and response punishment. Reinforcement increases a response only when the learner is aware of that connection. 4. Reciprocal causation: Bandura proposed that behavior can influence both the environment and the person. In fact each of these three variables, the person, the behavior, and the environment can have an influence on each other. . Modeling: There are different types of models. There is the live model, and actual person demonstrating the behavior. There can also be a symbolic model, which can be a person or action portrayed in some other medium, , such as television, videotape, computer programs. Behaviors that can be learned through modeling: Many behaviors can be learned, at least partly, through modeling. Examples that can be cited are, students can watch parents read, students can watch the demonstrations of mathematics problems, or seen someone acting bravely and a fearful situation. Aggression can be learned through models.

Much research indicate that children become more aggressive when they observed aggressive or violent models. Moral thinking and moral behavior are influenced by observation and modeling. This includes moral judgments regarding right and wrong which can in part, develop through modeling. Conditions necessary for effective modeling to occur: Bandura mentions four conditions that are necessary before an individual can successfully model the behavior of someone else: 1. Attention: the person must first pay attention to the model. 2. Retention: the observer must be able to remember the behavior that has been observed.

One way of increasing this is using the technique of rehearsal. 3. Motor reproduction: the third condition is the ability to replicate the behavior that the model has just demonstrated. This means that the observer has to be able to replicate the action, which could be a problem with a learner who is not ready developmentally to replicate the action. For example, little children have difficulty doing complex physical motion. 4. Motivation: the final necessary ingredient for modeling to occur is motivation, learners must want to demonstrate what they have learned.

Remember that since these four conditions vary among individuals, different people will reproduce the same behavior differently. Effects of modeling on behavior: Modeling teaches new behaviors. Modeling influences the frequency of previously learned behaviors. Modeling may encourage previously forbidden behaviors. Modeling increases the frequency of similar behaviors. For example a student might see a friend excel in basketball and he tries to excel in football because he is not tall enough for basketball. Self efficacy:

People are more likely to engage in certain behaviors when they believe they are capable of executing those behaviors successfully. This means that they will have high self-efficacy. In layman's terms self-efficacy could be looked as self confidence towards learning. How self-efficacy affects behavior: Joy of activities: individuals typically choose activities they feel they will be successful in doing. Effort and persistence: individuals will tend to put more effort and activities and behaviors they consider to be successful in achieving.

Learning and achievement: students with high self-efficacy tend to be better students and achieve more. Factors in the development of self efficacy: In general students typically have a good sense of what they can and cannot do, therefore they have fairly accurate opinions about their own self-efficacy. In my multimedia program, the challenge is to increase student self-efficacy. There are many factors which affect self efficacy. Some of these factors can be; previous successes and failures, messages received from others, and successes and failures of others. Note example of ACS and Cliff & Vanessa.

Self regulation: Self-regulation has come to be more emphasized in social learning theory. Self-regulation is when the individual has his own ideas about what is appropriate or inappropriate behavior and chooses actions accordingly. There are several aspects of self regulation: Setting standards and goals Self observation Self judge Self reaction Promoting self-regulation can be an important technique. This is usually done by teaching the individual to reward himself after doing the needed behavior. For example, a graduate student will tell himself to complete a certain chapter before taking a break and relaxing.

Self instructions: An effective strategy is to teach learners to give themselves instructions that guide their behavior. There are five steps to achieve this goal: Cognitive modeling: Overt external guidance Overt self guidance Faded, overt self guidance Covert self instruction Self monitoring and self reinforcement: These are two ways that people can control their own behavior. First they monitor and observe their own behavior, sometimes even scoring behavior. Secondly, people are also able to change their behavior by reinforcing themselves, by giving or withholding reinforcement.

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Educational implications of social learning theory: Social learning theory has numerous implications for classroom use. 1. Students often learn a great deal simply by observing other people. 2. Describing the consequences of behavior is can effectively increase the appropriate behaviors and decrease inappropriate ones. This can involve discussing with learners about the rewards and consequences of various behaviors. 3. Modeling provides an alternative to shaping for teaching new behaviors. Instead of using shaping, which is operant conditioning, modeling can provide a faster, more efficient means for teaching new behavior.

To promote effective modeling a teacher must make sure that the four essential conditions exist; attention, retention , motor reproduction, and motivation. 4. Teachers and parents must model appropriate behaviors and take care that they do not model inappropriate behaviors. 5. Teachers should expose students to a variety of other models. This technique is especially important to break down traditional stereotypes. 6. Students must believe that they are capable of accomplishing school tasks. Thus it is very important to develop a sense of self-efficacy for students.

Teachers can promote such self-efficacy by having students receive confidence-building messages, watch others be successful, and experience success on their own. . 7. Teachers should help students set realistic expectations for their academic accomplishments. In general in my class that means making sure that expectations are not set too low. I want to realistically challenge my students. However, sometimes the task is beyond a student's ability, example would be the cancer group. 8. Self-regulation techniques provide an effective method for improving student behavior.

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