

Classical and operant conditioning

Answers

There are some basic concepts that apply to learned behaviours in general. When an animal or person responds to an object or individual in their environment, that trigger for behaviour is called a **stimulus**. Some stimuli naturally produce effects on animals and other stimuli can acquire that property through **learning**. The behaviour that is produced in response to a stimulus is called a **response**. Psychologists began investigating learning by looking at the relationship between the two; this is sometimes called **S-R** psychology. Later, psychologists became interested in the processes occurring in between, i.e. **cognition**.

Classical conditioning occurs when two stimuli, one of which already elicits a response, are paired together. The stimulus that naturally produces a response is called the **unconditioned stimulus**. The behaviour it elicits is called the **unconditioned response**. The stimulus it is paired with, which initially does not produce the response in question, is called the **neutral stimulus**. After several pairings, an association is built up between the two stimuli. As a consequence, the new stimulus, now known as the **conditioned stimulus**, will also elicit the behaviour in question, now called the **conditioned response**. For example, I could condition my rabbit to twitch its nose (**UCR**) by pairing nice-smelling dandelion leaves (**UCS**), which always make its nose twitch, with the sound of me clicking my fingers (**NS**). After weeks of repeatedly clicking my fingers when I feed her dandelion leaves, she will start to twitch her nose (**CR**) whenever I click my fingers (**CS**). However, if I keep clicking my fingers without giving her any dandelion leaves, eventually she will **stop** twitching her nose. This is an example of **extinction**. If I stopped clicking and giving her dandelion leaves altogether for a while, then started clicking again, she would twitch her nose again. This is called **spontaneous recovery**.

Operant conditioning occurs when a behaviour is either reinforced or punished. Positive or negative reinforcement will **increase** the frequency of a behaviour that it follows whereas punishment will **decrease** the frequency of behaviours. In **positive reinforcement** the reinforcer is pleasant when it is given whereas in **negative reinforcement** the reinforcer is pleasant when it stops. The effects of punishment are always **unpleasant**. This may be giving something **nasty** or taking away something **nice**. For example, I may train my dog to walk to heel by giving him a treat when he stays close to me – this is **positive** reinforcement. I could train my neighbour's cat to stay out of the flower beds by spraying him with water every time he sits near the flowers – this is an example of **punishment**. If Bob has a headache, he takes painkillers and the headache goes away, so he is more likely to take painkillers the next time he has a headache. This is an example of **negative** reinforcement.

Reinforcers such as food, sex and reduction of pain are naturally rewarding; they are called **primary** reinforcers. Another example is **social companionship**. Other reinforcers gain the property of rewarding behaviour only because they have been associated with another consequence that is pleasant. These are called **secondary** reinforcers. For example, money is reinforcing because it can buy us things that satisfy our needs such as clothing or heating to keep us warm. Another example is **merit marks**.

Classical and operant conditioning

Answers *continued*

stimulus	UCS	unpleasant
learning	NS	nasty
response	CR	nice
S-R	CS	positive
cognition	stop	punishment
classical conditioning	extinction	negative
unconditioned stimulus	spontaneous recovery	primary
unconditioned response	operant conditioning	social companionship
neutral stimulus	increase	secondary
conditioned stimulus	decrease	merit marks
conditioned response	positive reinforcement	
UCR	negative reinforcement	