

Reinforcement and Classical/Operant Conditioning

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Reinforcement Schedule Compared			
Schedule of Reinforcement	Response Rate	Pattern of Responses	Resistance to Extinction
Fixed-ratio schedule	Very high	Steady response with low ratio. Brief pause after each reinforcement with very high ratio.	The higher the ratio, the more resistance to extinction.
Variable-ratio schedule	Highest response rate	Constant response pattern, no pauses	Most resistance to extinction.
Fixed-interval schedule	Lowest response rate	Long pause after reinforcement, followed by gradual acceleration.	The longer the interval, the more resistance to extinction.
Variable-interval schedule	Moderate	Stable, uniform response.	More resistance to extinction than fixed-interval schedule with same average interval.

Comparing Classical and Operant Conditioning: What's the Difference?

In summary, the processes of generalisation, discrimination, extinction, and spontaneous recovery occur in both classical and operant conditioning. Both types of conditioning depend on associative learning. In classical conditioning, an association is formed between two stimuli –for example, a tone and form, a white rat and a loud noise, a product and a celebrity. In operant conditioning, the association is established between a response and its consequences –studying hard and a high-test grade, or, in the world of rats, bar pressing and food.

In classical conditioning, the focus is on what precedes the response. Pavlov focused on what led up to the salivation in his dogs, not on what happened after they salivated. In operant conditioning, the focus is on what follows the response. If a rat's bar pressing or your studying is followed by a reinforcer, that response is more likely to occur in the future.

Generally, in classical conditioning, the subject is passive and responds to the environment rather than acting on it. In operant conditioning, the subject is active and *operates* on the environment. Children *do* something to get their parents' attention or their praise.

Classical and Operant Conditioning Compared		
Characteristics	Classical Conditioning	Operant Conditioning
Types of association	Between two stimuli	Between a response and its consequence
State of subject	Passive	Active
Focus of attention	On what precedes response	On what follows response
Types of response typically involved	Involuntary or reflexive response	Voluntary response
Bodily response typically involved	Internal responses: emotional and glandular reactions	External responses: muscular and skeletal movement and verbal responses
Range of responses	Relatively simple	Simple to highly complex
Responses learned	Emotional reactions: fear, likes, dislikes	Goal-oriented responses

The Effects of Reinforcement and Punishment	
Reinforcement (Increases or strengthens a behaviour)	Punishment (Decreases or suppresses a behaviour)
Adding a Positive (positive reinforcement) Presenting food, money, praise, attention, or other rewards.	Adding a Negative Delivering a pain-producing or otherwise aversive stimulus, such as a spanking or an electric shock.
Subtracting a Negative (negative reinforcement) Removing or terminating some pain-producing or otherwise aversive stimulus, such as an electric shock.	Subtracting a Positive Removing some pleasant stimulus or taking away privileges such as TV watching or use of automobile.