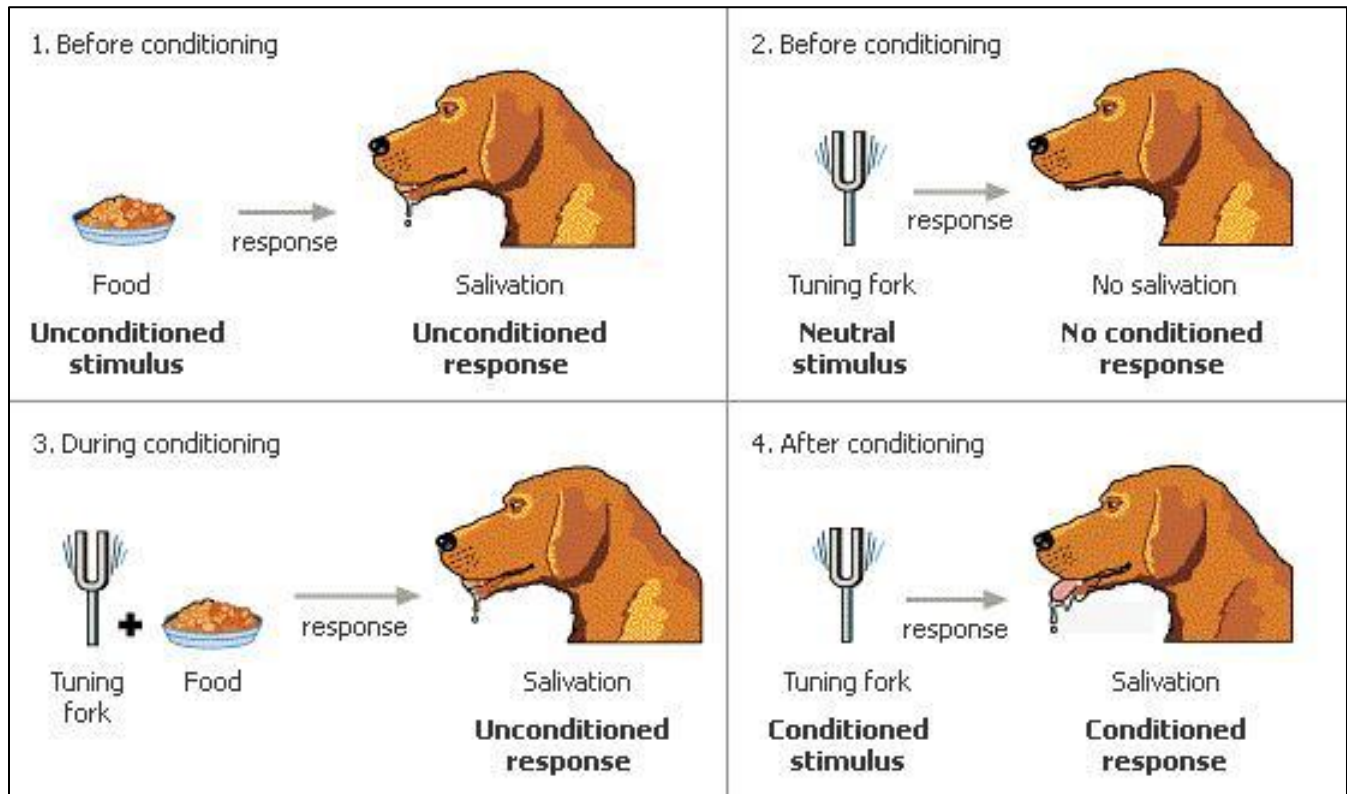


**Unit 6 Handout**  
**Pavlov's Classical Conditioning**



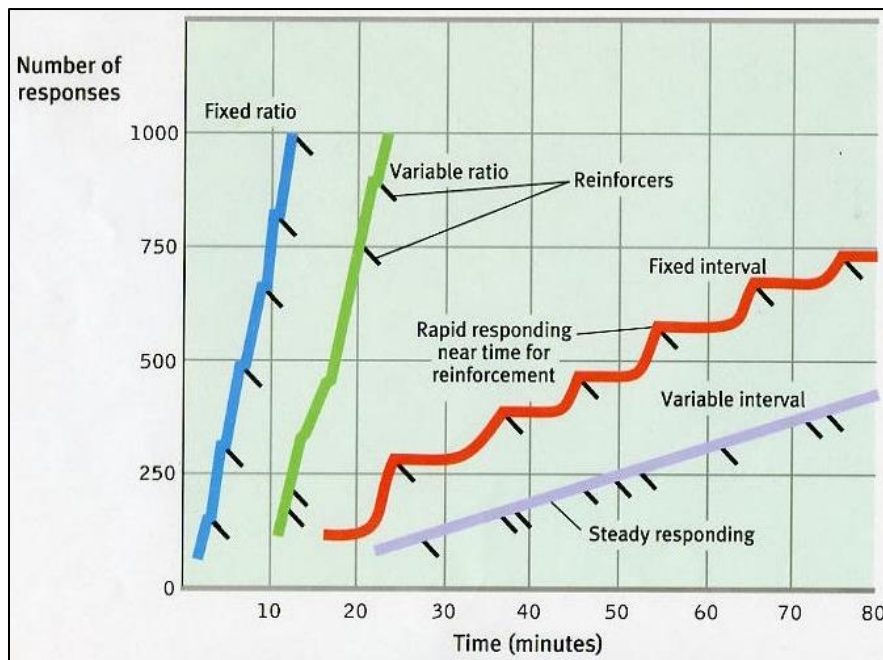
**Positive/Negative Reinforcement & Positive/Negative Punishment**

<p><b>The 4 Quadrants of Punishment and Reinforcement</b></p>	<p>To <i>increase</i> the behavior</p>	<p>To <i>decrease</i> the behavior</p>
<p><i>Add</i> something to the environment</p>	<p><b>Positive Reinforcement</b>            (Example: Giving your dog a treat after they sit, then they sit more in the future.)</p>	<p><b>Positive Punishment</b>            (Example: Grabbing your dog's muzzle when they growl, then they growl less in the future.)</p>
<p><i>Remove</i> something from the environment</p>	<p><b>Negative Reinforcement</b>            (Example: Removing a shock when your dog eventually responds to a call to come, then they come faster in the future.)</p>	<p><b>Negative Punishment</b>            (Example: Giving your dog a time out when they nip your hand during tug, then they do not nip in the future.)</p>

## Reinforcement Schedules

Schedule	Definition	Example	Response Pattern	Reaction When Reinforcement Stops
Continuous	Reinforcement after every response	Turning on the television	Rapid learning of response	Very little persistence; rapid disappearance of response
Fixed-interval	Reinforcement after a set period of time	Weekly quiz	Response rate increases as time for reinforcement approaches, then drops after reinforcement	Little persistence; rapid drop in response rate when time for reinforcement passes and no reinforcer appears
Variable-interval	Reinforcement after varying lengths of time	Pop quizzes	Slow, steady rate of responding; very little pause after reinforcement	Greater persistence; slow decline in response rate
Fixed-ratio	Reinforcement after a set number of responses	Piece work Bake sale	Rapid response rate; pause after reinforcement	Little persistence; rapid drop in response rate when expected number of responses are given and no reinforcer appears
Variable-ratio	Reinforcement after a varying number of responses	Slot machines	Vary high response rate; little pause after reinforcement	Greatest persistence; response rate stays high and gradually drops off

## Effects of Reinforcement Schedules



## Comparison of Classical & Operant Conditioning

<b>COMPARISON OF CLASSICAL AND OPERANT CONDITIONING</b>		
	<b>Classical Conditioning</b>	<b>Operant Conditioning</b>
<b>Response</b>	Involuntary, automatic.	Voluntary, operates on environment.
<b>Acquisition</b>	Associating events; CS announces US.	Associating response with a consequence (reinforcer or punisher).
<b>Extinction</b>	CR decreases when CS is repeatedly presented alone.	Responding decreases when reinforcement stops.
<b>Cognitive processes</b>	Organisms develop expectation that CS signals the arrival of US.	Organisms develop expectation that a response will be reinforced or punished; they also exhibit latent learning, without reinforcement.
<b>Biological predispositions</b>	Natural predispositions constrain what stimuli and responses can easily be associated.	Organisms best learn behaviors similar to their natural behaviors; unnatural behaviors instinctively drift back toward natural ones.