PSY 152 LEARNING AND CONDITIONING

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Learning Objectives

- Defining learning
- Discuss Classical Conditioning
- Discuss Operant Conditioning
- Discuss Social Cognitive Learning

Definitions

❖Learning

❖A relatively permanent change in behavior that results from experience (behavioral perspective)

❖The process by which organisms make relatively permanent changes in the way they represent the environment (cognitive perspective)
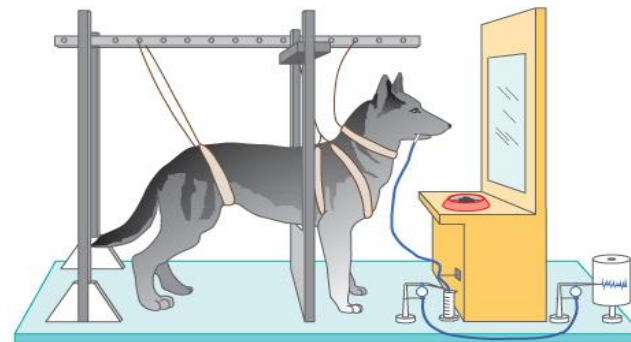
❖Conditioning

A kind of learning that involves the association between environmental stimuli and behavior

Classical Conditioning

❖Ivan Pavlov (1849-1936)

❖The process by which a previously neutral stimulus acquires the capacity to elicit a response through association with a stimulus that already elicits a similar response

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Classical Conditioning

❖Basic Concepts

❖Stimulus: An environmental condition that elicits a response e.g., meat, bell

❖Unconditioned stimulus (UCS): A stimulus that elicits a response from an organism prior to conditioning e.g., meat

❖Conditioned stimulus (CS): a previously neutral stimulus that elicits a conditioned response because it has been paired repeatedly with a stimulus that already elicited that response e.g., bell

Classical Conditioning

❖Basic Concepts

Reflex: A simple unlearned response to a stimulus.

Unconditioned response (UCR): An unlearned response to an unconditioned stimulus.

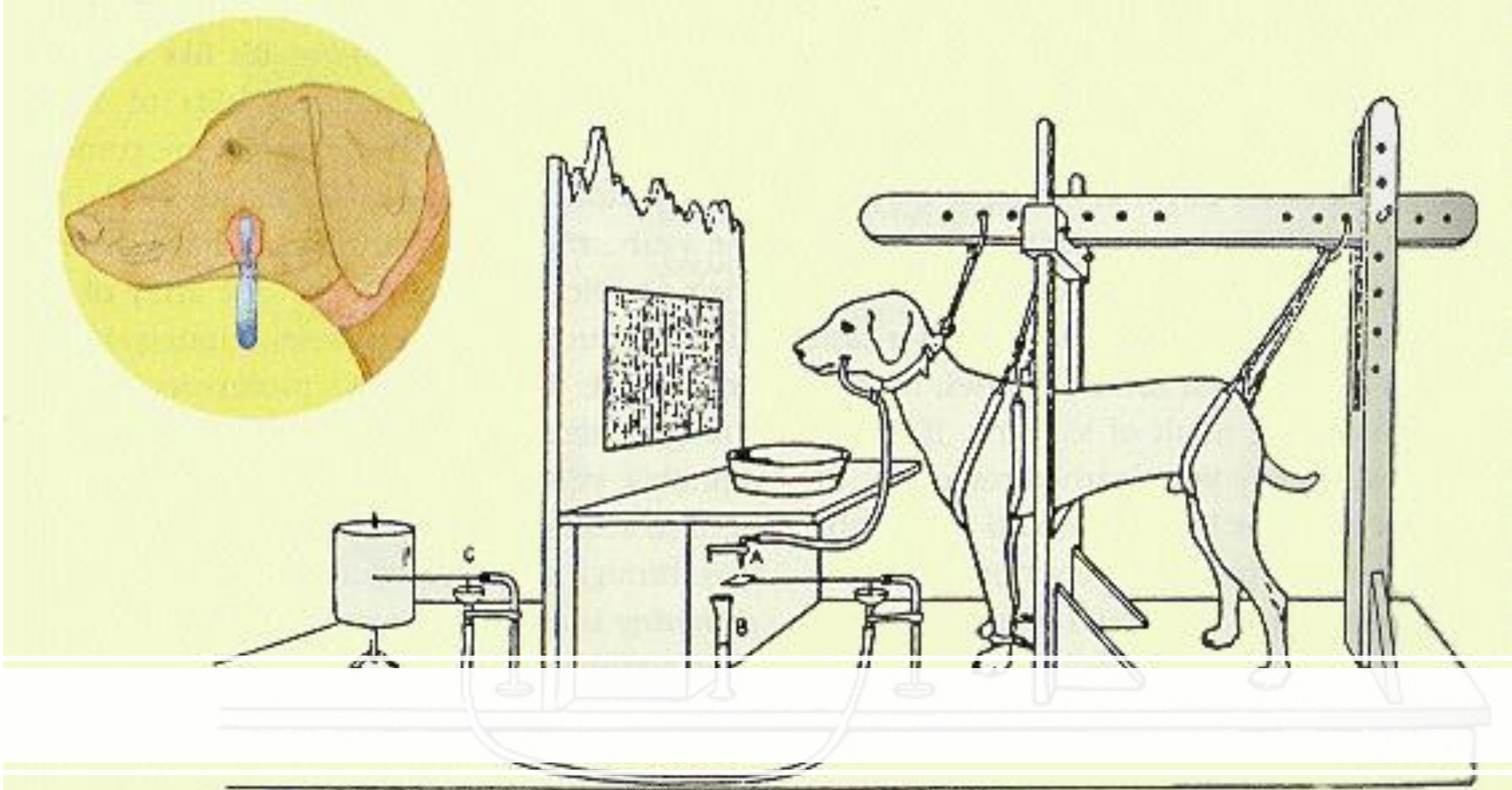Conditioned response (CR): A learned response to a conditioned stimulus

Classical Conditioning

❖ Three Basic mechanism (3 phases of conditioning)

    ❖ Before conditioning: Unconditioned stimulus (UCS) naturally elicits an instinctive response i.e., UCR

    ❖ During conditioning: A neutral stimulus (NS: i.e., CS) pairs with the UCS

    ❖ After conditioning: Neutral stimulus becomes the CS to elicit CR.

Classical Conditioning

❖Food (meat powder)

❖Salivating

❖Ringing bell

Which of the above do you think is a neutral stimulus and why?

Setting of the Pavlov's Experiment

Before Conditioning

Neutral Stimulus (NS)

No response
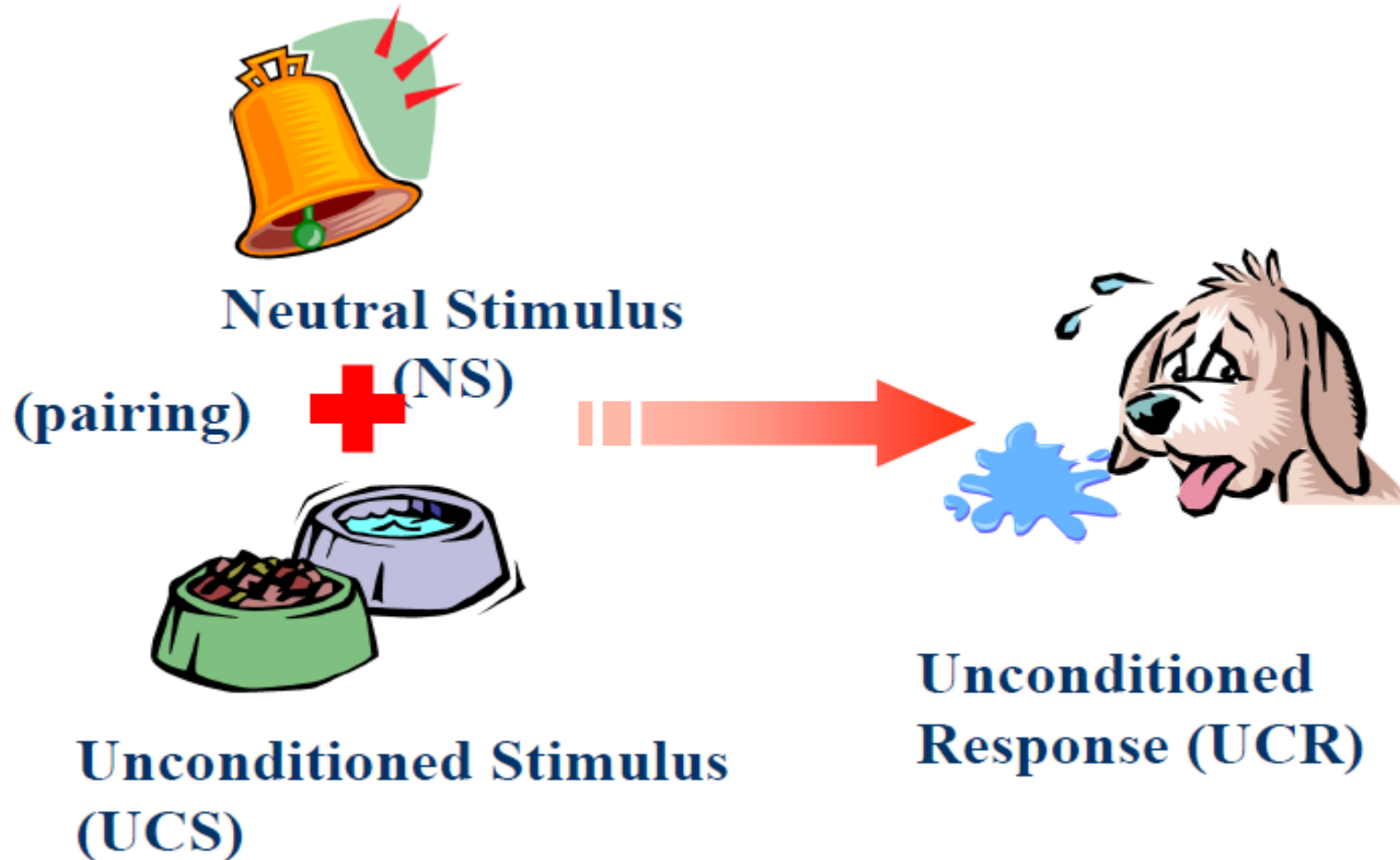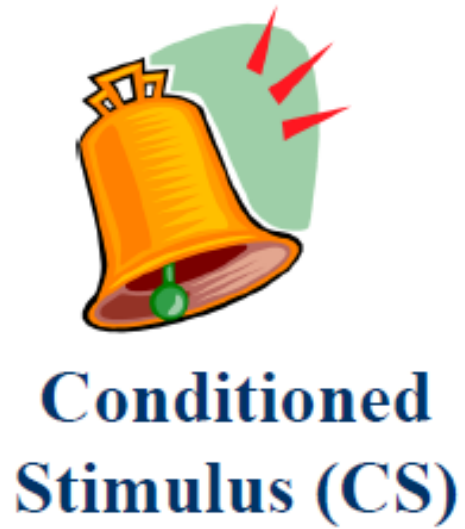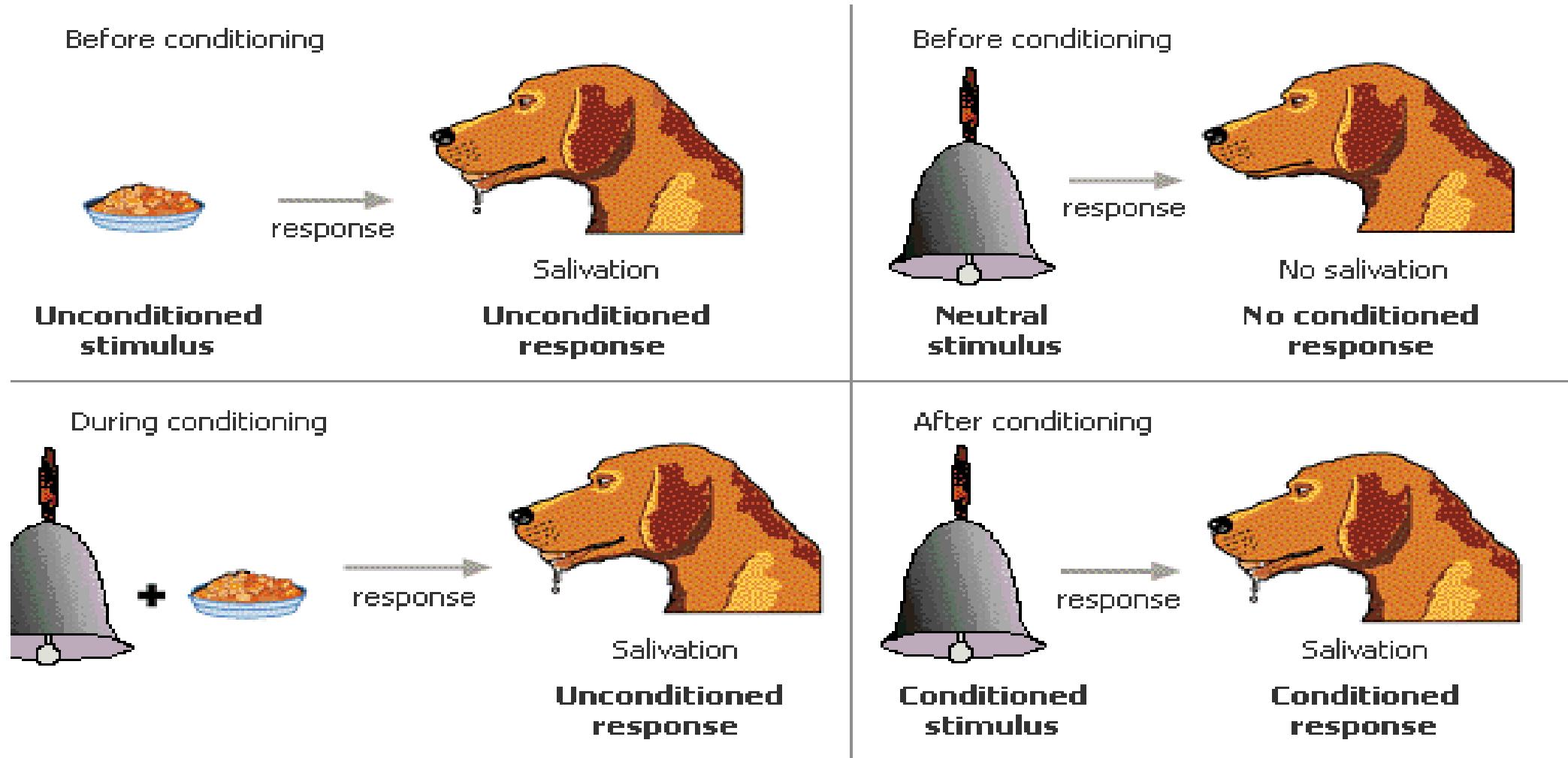
Unconditioned Stimulus (UCS)

Unconditioned Response (UCR)

During Conditioning

Neutral Stimulus (NS)

(pairing) +

Unconditioned Stimulus (UCS)

Unconditioned Response (UCR)

After Conditioning

Conditioned Stimulus (CS)

Conditioned Response (CR)
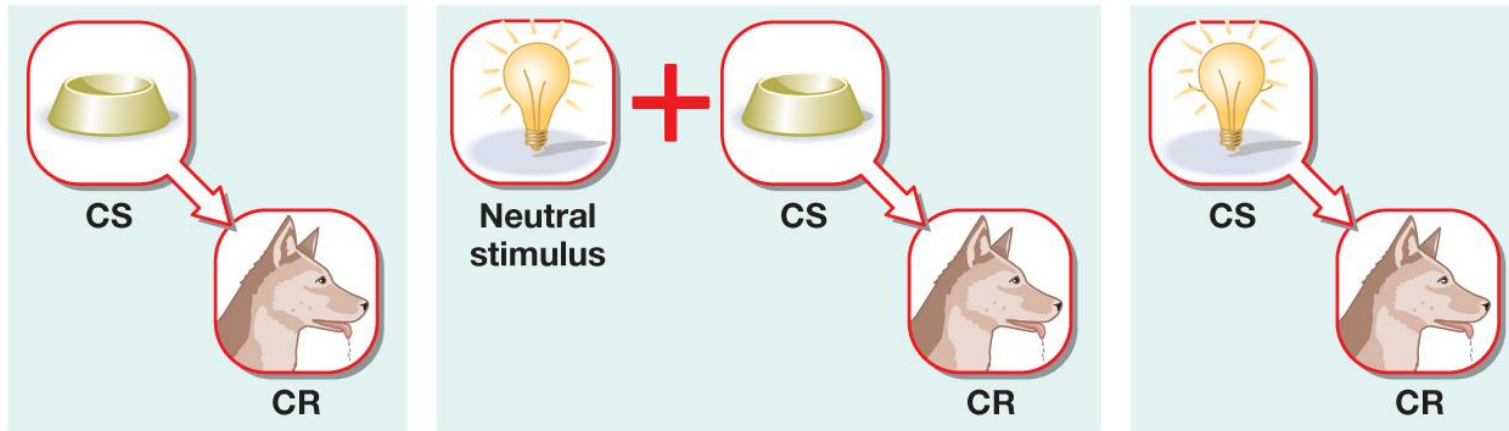
Classical Conditioning

Principles of Classical Conditioning

Extinction: Weakening of the conditioned response after repeated presentation of the CS without the UCS

Spontaneous recovery: The reappearance of an extinguished response after a period of non-exposure to CS.

Principles of Classical Conditioning

Higher-order conditioning: A neutral stimulus can become a conditioned stimulus by being paired with an existing conditioned stimulus.

Principles of Classical Conditioning

❖**Stimulus generalization:** After conditioning, the tendency to respond to a stimulus that is similar to the one involved in the original conditioning. e.g., whistle

❖**Stimulus discrimination**: The tendency to respond differently to two or more similar stimuli i.e., a stimulus similar to the CS fails to evoke a CR.

Your Turn

Discuss at least 5 classical conditioning examples in everyday life

Operant Conditioning

❖E. Thorndike & B. F. Skinner (1849-1936)

❖Operant condition/instrumental condition: A form of learning in which an organism learns to engage in behavior because it is reinforce

❖The frequency of behavior increases or decreases because of the consequence of the behavior

Operant Conditioning

❖Basic Concepts

❖Operant behavior: Voluntary response that are reinforced.

❖Law of effect. Principle that responses are "stamped in" by rewards and "stamped out" by punishment.

❖Reinforcement: A process that increases or decreases the likelihood of a behavior being repeated.

❖Punishment: An unpleasant stimuli which decreases the likelihood of a behavior being repeated

❖Reward: A pleasant stimulus that increases the likelihood of a behavior being repeated.

Operant Conditioning

Reinforcement:
strengthens the
response or makes it
more likely to recur

Response becomes more likely
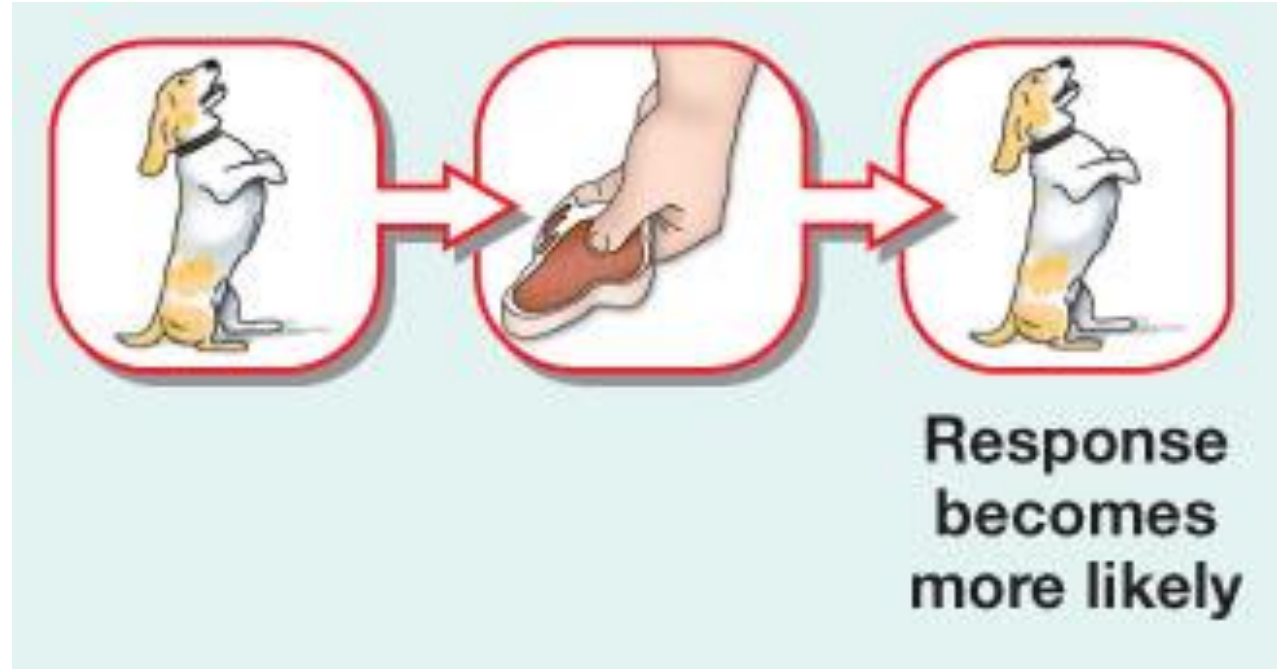
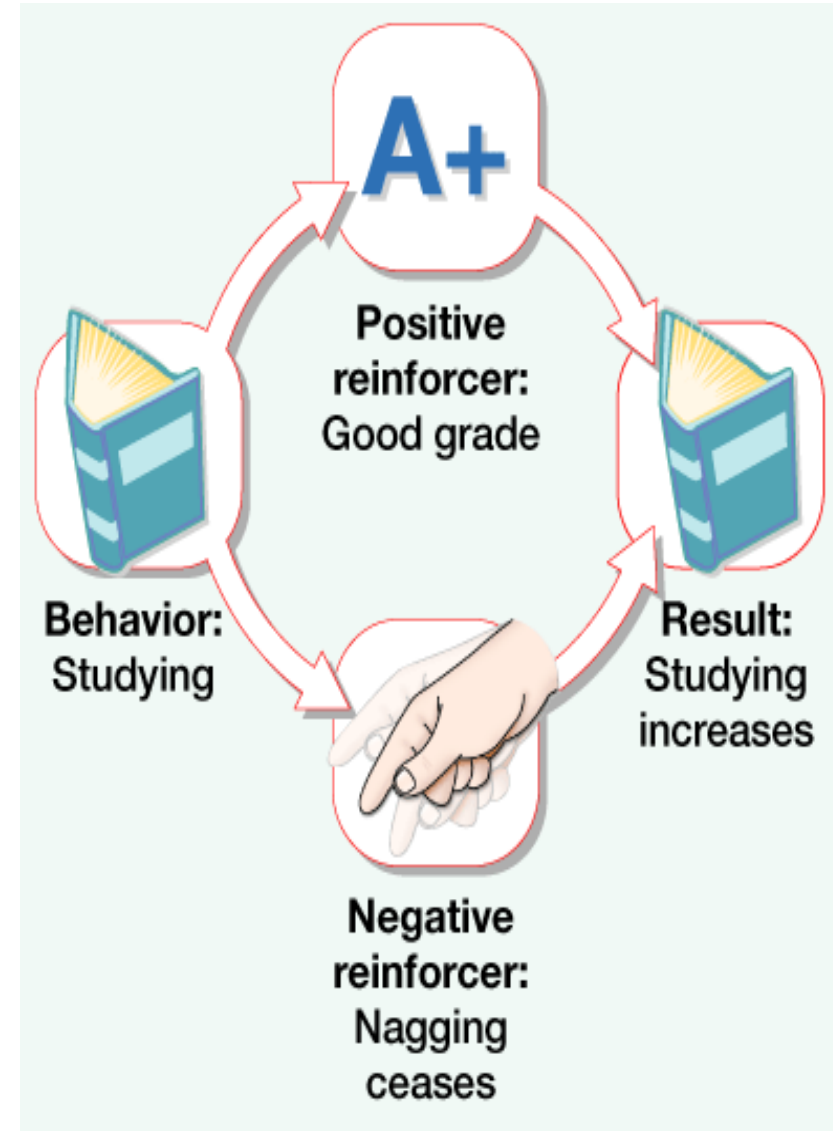# Operant Conditioning

❖Types of Reinforcement

❖Positive reinforcement: Increase the probability that a behavior will occur following the presentation of pleasant stimulus. e.g., praising a child for answering a question in class

❖Negative reinforcement: Increase the probability that a behaviour will occur when unpleasant stimulus is removed. E.g., leaving house early to avoid traffic

A+

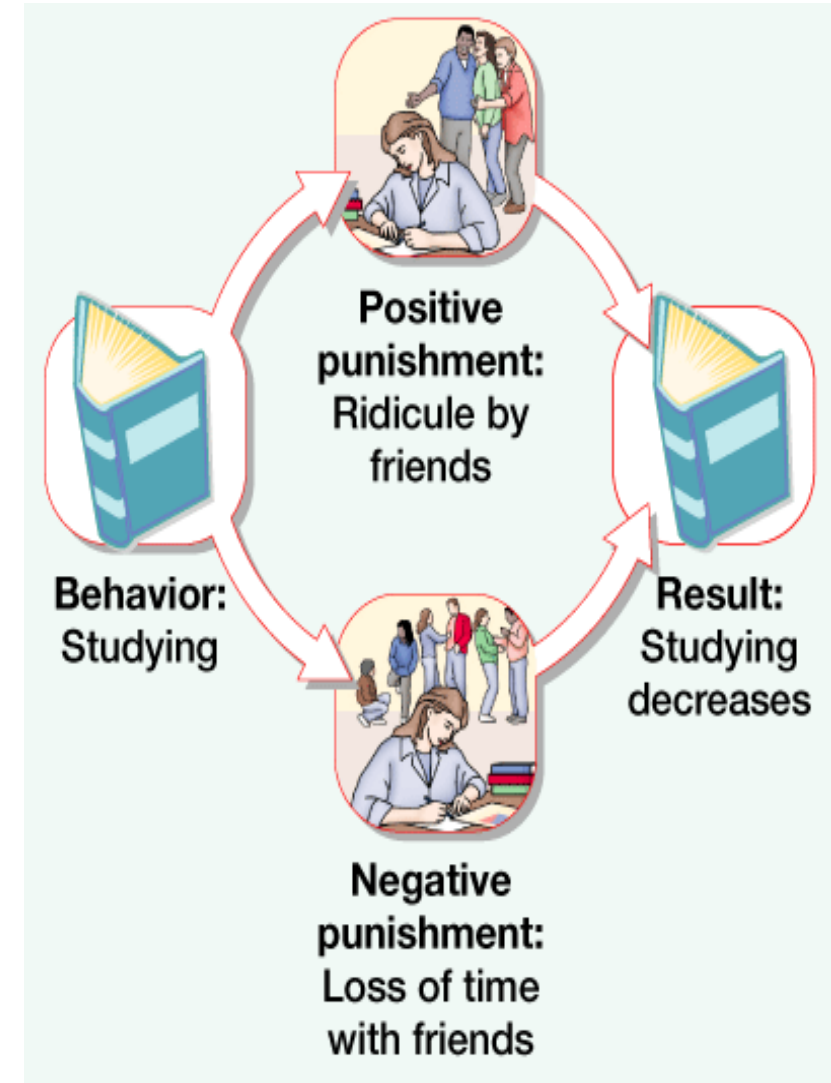Positive reinforcer: Good grade

Behavior: Studying

Result: Studying increases

Negative reinforcer: Nagging ceases

Operant Conditioning

Punishment: weakens a response or makes it less likely to recur
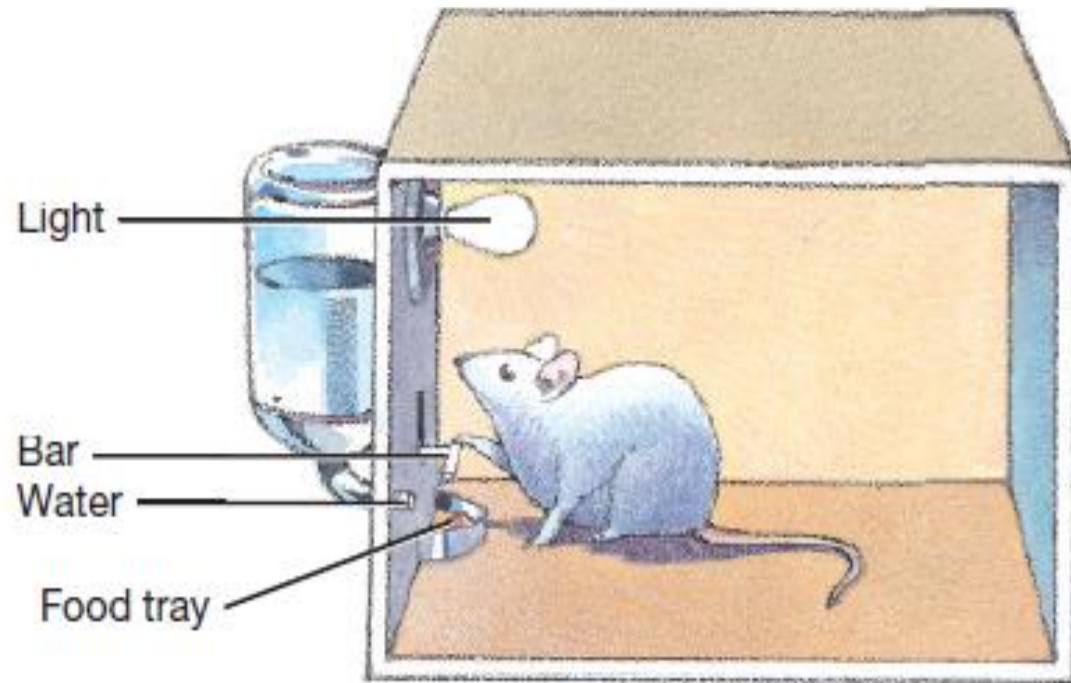

"No!"

Response becomes less likely
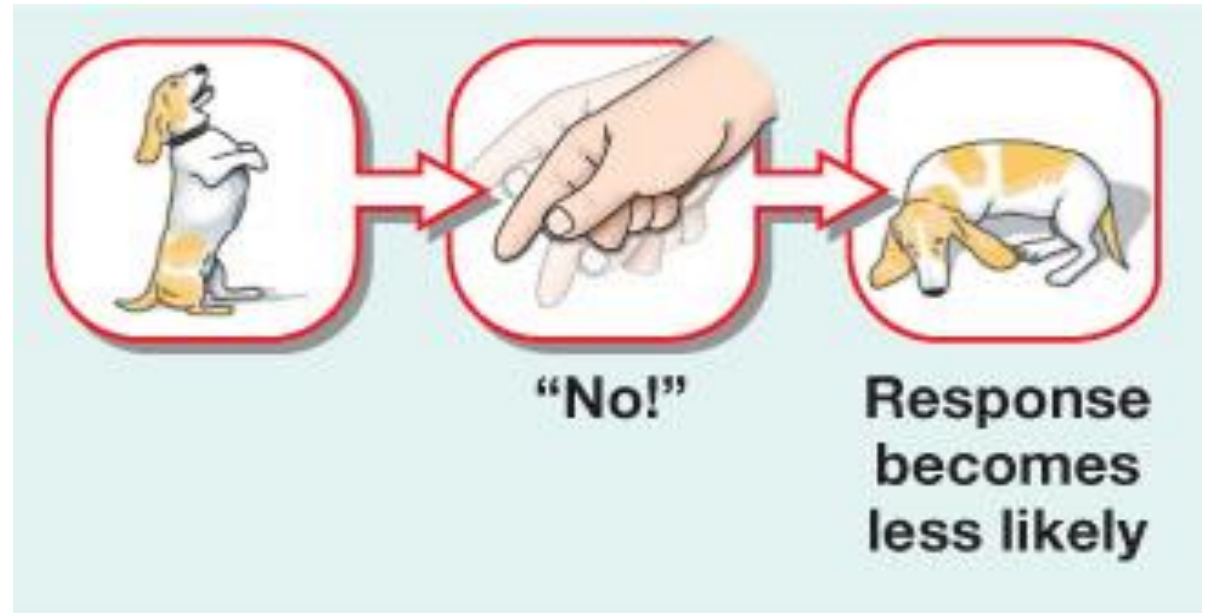
Operant Conditioning

❖Types of punishment
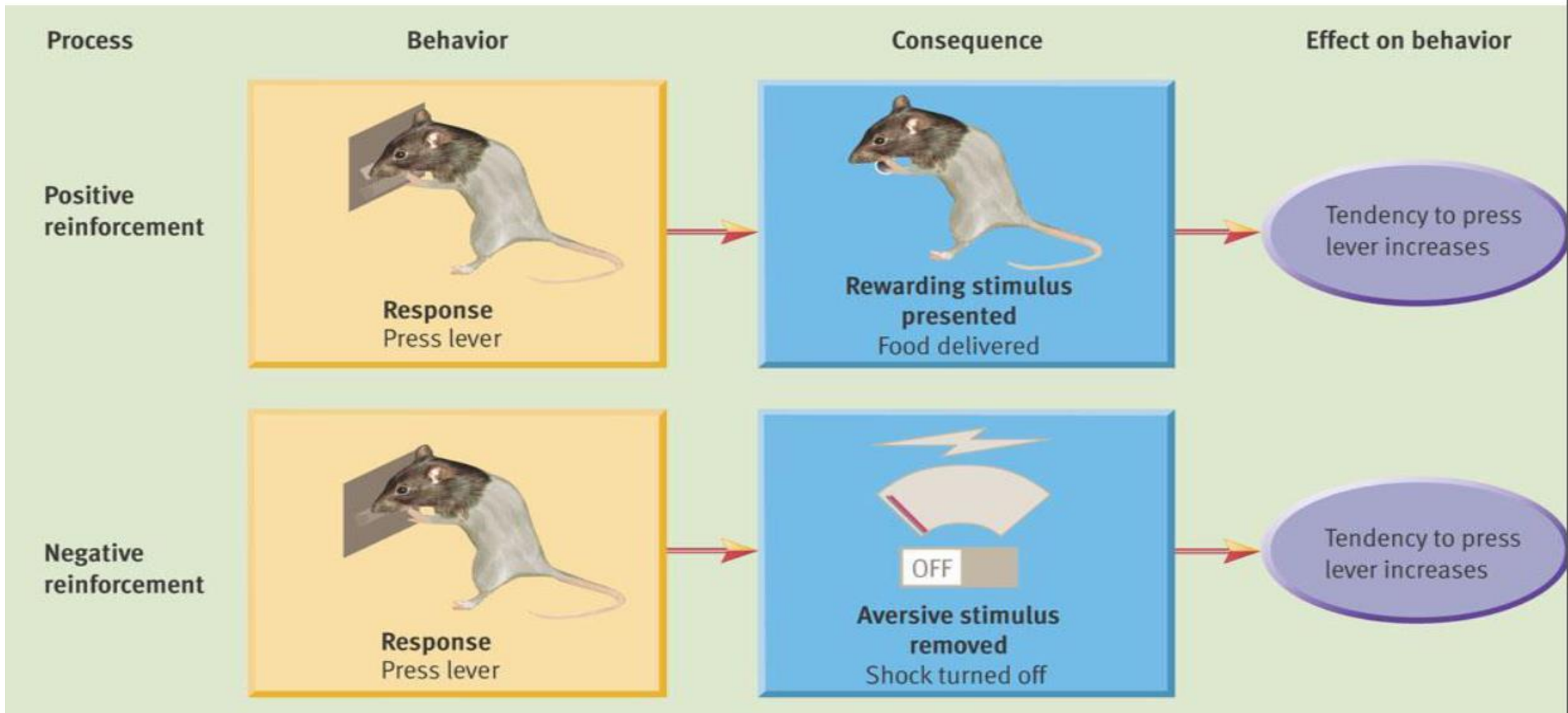
❖Positive punishment: decreases the probability that a behavior will occur following the presentation of unpleasant stimulus e.g., spanking

❖Negative punishment: decreases the probability that a behaviour will occur when pleasant stimulus is removed. E.g., preventing a child to watch favourite cartoon

Behavior: Studying

Positive punishment: Ridicule by friends

Result: Studying decreases

Negative punishment: Loss of time with friends

The Skinner's Box

Light

Bar
Water

Food tray

Reinforcement

Operant Conditioning

❖Reinforcement schedule

❖Continuous reinforcement: Every response is reinforced

❖Partial reinforcement: Not every response is reinforced

Operant Conditioning

Four possible Reinforcement schedule

1.Fixed-ratio: Reinforcement is provided after a fixed number of responses

2. Fixed-interval: Reinforcement is provided after a fixed amount of time has elapsed

3. Variable-ratio: reinforcement is provided after an unpredictably varying number of responses

4. Variable-interval: reinforcement provided after an unpredictably varying amount of time has elapsed

Operant Conditioning

❖Shaping: A procedure for teaching complex behaviors that at first reinforces approximations of the target behavior
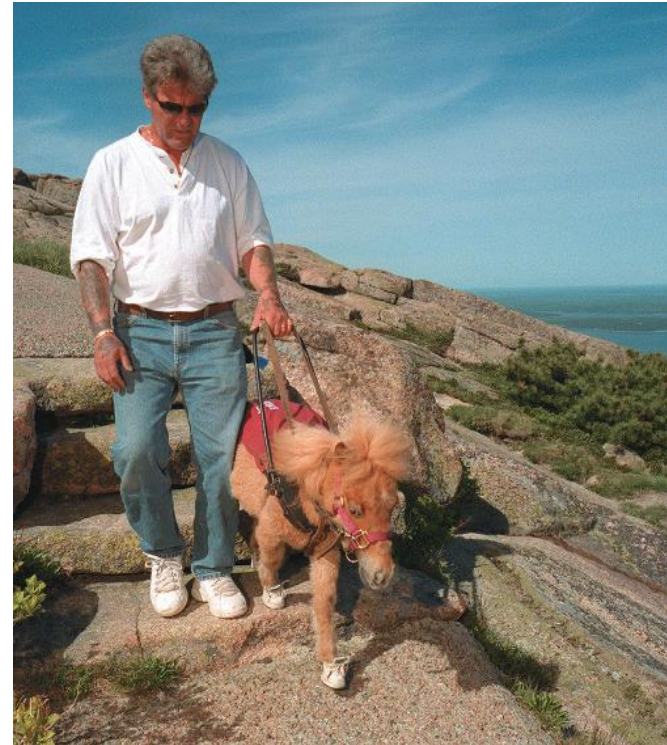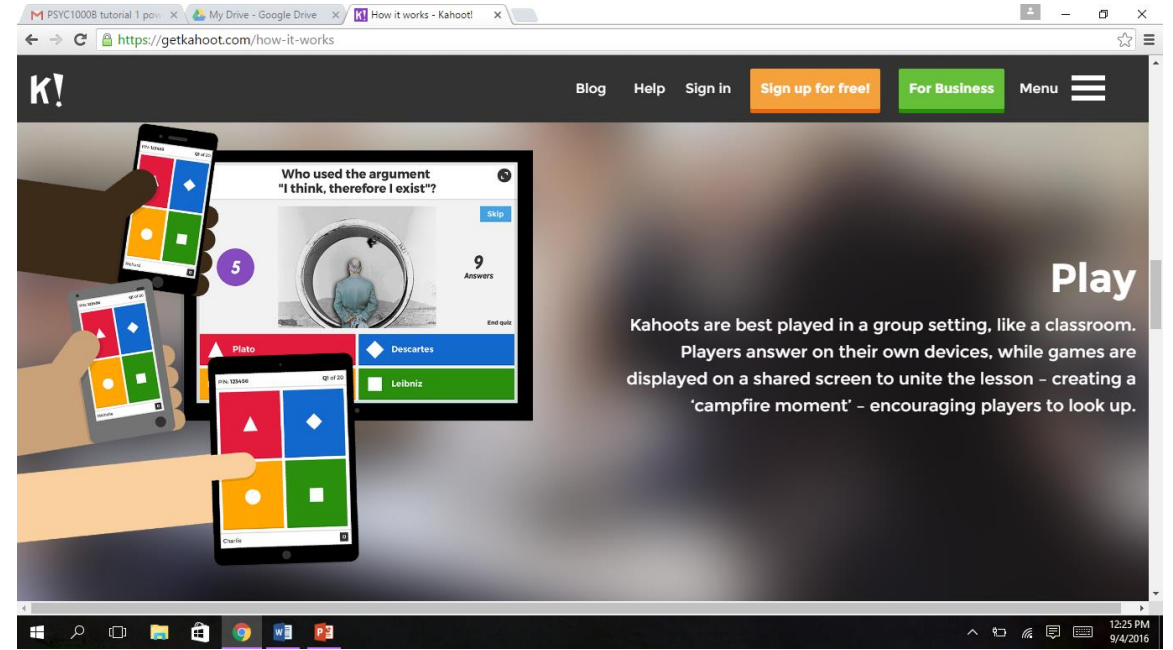
Social Cognitive Learning

❖Badura et al. (1960s); Bobo dolls experiments

❖Social-cognitive theories-emphasize the ways in which behavior is learned and maintained.

❖It is learning through observation, modelling and imitation of others.

❖Observational learning- involves learning new responses by observing the behavior of another rather than through direct experience.

Social Cognitive Learning

❖Processes of social cognitive learning

❖Attention- Pay attention to another person's behavior and its consequences

❖Retention-remember what you have witnessed

❖Reproduction- in convert your mental images into observable behavior (based on your ability/competence)

❖Motivation-you will consider to perform that behavior when it is positive to you.

Mini Quiz