T2 - COMPONENTS OF MOTIVATION

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LEARNING OUTCOME

Able to explain components of motivation.

- Biological component
- Learning component
- Cognitive component
INTRODUCTION

3 major components of motivation

- **Biological**: Activates brain circuits
- **Learning**: Triggers learned responses
- **Cognitive**: Controls by making plans

MOTIVATED BEHAVIOUR
1. THE BIOLOGICAL COMPONENT

Motivation via instincts was important for human behaviour

All thoughts and behaviour resulted from instincts (curiosity, aggression & sociability)
Human behaviours were inherent

- Assumes our brain today is a result of years of experiences and learning.
- Brain is made up of number of systems that work together with the body to produce our actions.

Humans have two central complementary drives (minds):

- self-preservation
- preservation of the species
Specific brain structure generate specific motivational states.

- Stimulating a specific brain site generate the subjective experience of a specific motivational state.

- If something happened to damage a particular brain structure, the person capacity to experience that specific motivational state would be compromised.

- Brain structure have receptor sites on them that endow them with the potential to be stimulated.

- Biochemical agents stimulate these brain structure.

- The biochemical agents that stimulate these receptor sites are neurotransmitters and hormones.
NEUROTRANSMITTER... are the communication messengers of the nervous system (allowing one neuron to communicate with another).

HORMONES... are the communication messengers of the endocrine system (allowing glands to communicate with bodily organs like the heart or lungs).
LEARNING OUTCOME

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- Motor Cortex (Movement)
- Sensory Cortex (Pain, heat, and other sensations)
- Central Sulcus
- Parietal Lobe (Comprehension of language)
- Temporal Lobe (Hearing)
- Occipital Lobe (Primary visual area)
- Wernicke's area (Speech comprehension)
- Brainstem (Swallowing, breathing, heartbeat, wakefulness center and other involuntary functions)
- Broca's Area (Speech)
- Frontal Lobe (Judgement, foresight, and voluntary movement)
- Frontal Lobe (Smell)
- Temporal Lobe (Intellectual and emotional functions)
Brain Functionality

- Frontal Lobe:
  - problem solving
  - creative thinking
  - personality

- Temporal Lobe:
  - memories

- Parietal Lobe:
  - visual functions
  - reading
  - understanding language

- Occipital Lobe:
  - vision

- Cerebellum:
  - balance
  - coordination
  - motor learning

- Brain Stem:
  - basic life functions

UPMC Life Changing Medicine
LEFT BRAIN FUNCTIONS

Right side of body control
Number skills
Math/Scientific skills
Written language
Spoken language
Objectivity
Analytical
Logic
Reasoning

RIGHT BRAIN FUNCTIONS

Left side of body control
3-D shapes
Music/Art awareness
Intuition
Creativity
Imagination
Subjectivity
Synthesizing
Emotion
Face recognition
LEARNING OUTCOME

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BETWEEN MINDS
AN ONGOING TAXONOMY OF TEAM DYNAMICS

LEFT BRAIN VS RIGHT BRAIN

INFO PROCESSING
PROJECT ENGAGEMENT
PERCEPTION
WORKFLOW
PROBLEM SOLVING

INFO IN A LINEAR MANNER
IDENTIFY IMPORTANT DETAILS
ANALYTICAL
MOVE IN A SEQUENTIAL ORDER
USE LOGIC TO SOLVE PROBLEMS

PROCESS INFO HOLISTICALLY
SEE END RESULT WITH CLARITY
CREATIVE
MOVE RANDOMLY FROM TASK TO TASK
USE INTUITION TO SOLVE PROBLEMS

Mindjet & JESS3
how we react to the world (reactivity)
how we self-regulate ourselves (self-control) in the face of certain environmental demands.
Our predisposition to act one way or another:
✓ High activity (preference for intense stimulation and like of risk-taking).
✓ Negativity (fearful/sad and angry when frustrated).
✓ Regulation of attention/behavior (effortful control).
Personality differences are being explored biologically in the brain. Several personality traits are associated with definite brain regions.

<table>
<thead>
<tr>
<th>Big 5 Trait</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Openness</td>
<td>The tendency to appreciate new art, ideas, values, feelings, and behaviors.</td>
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<tr>
<td>Conscientiousness</td>
<td>The tendency to be careful, on-time for appointments, to follow rules, and to be hardworking.</td>
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<tr>
<td>Extraversion</td>
<td>The tendency to be talkative, sociable, and to enjoy others; the tendency to have a dominant style.</td>
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<tr>
<td>Agreeableness</td>
<td>The tendency to agree and go along with others rather than to assert one’s own opinions and choices.</td>
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<tr>
<td>Neuroticism</td>
<td>The tendency to frequently experience negative emotions such as anger, worry, and sadness, as well as being interpersonally sensitive.</td>
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1. The one major personality trait that did not have an association with a brain area volume in this study was openness/intellect, which includes people who are creative, philosophical, imaginative, and intellectually engaged.

2. The lateral prefrontal cortex, involved in planning and the voluntary control of behavior, seemed to be associated with conscientiousness. People who are highly conscientious tend to be self-disciplined and orderly, rather than impulsive.

3. Brain areas dealing with information about the intentions and mental states of other people were associated with agreeableness. Cooperation, compassion, and politeness are part of agreeableness.

4. A brain region involved in processing reward information, (the medial orbitofrontal cortex, seemed to be associated with how extroverted participants were. Extroverted people tend to be more sociable and talkative.

5. Brain regions associated with threat, punishment, and negative affect seemed to have something to do with how neurotic participants were. Neuroticism includes elements of irritability, anxiety, and being self-conscious.
APPRAOCH/AVOIDANT MOTIVATION

BRAIN CIRCUITS

BEHAVIORAL ACTIVATION SYSTEM (BAS)

APPROACH MOTIVATION
Sensitive to reward

BEHAVIORAL INHIBITION SYSTEM (BIS)

AVOIDANCE MOTIVATION
Sensitive to punishment
2. THE LEARNING COMPONENT

- Attention governs learning.
  - Focus sensory receptors on source of information and analyse (attending);
  - Focus on given source and selectively process (selective attention);
  - Organise the information.
- Attention is governed partly by motivational processes.
- Associative learning: (S-R learning) the connection or association of stimuli and responses.
  - Depends on receptor orientation and selective attention.
  - Deliberate (intentional) or incidental (passive) learning.
1. Before Conditioning
   - Food (Unconditioned Stimulus)
   - Salivation (Response)

2. Before Conditioning
   - Bell (Neutral Stimulus)
   - No Salivation (Response)

3. During Conditioning
   - Bell + Food (Unconditioned Stimulus)
   - Salivation (Response)

4. After Conditioning
   - Bell (Conditioned Stimulus)
   - Salivation (Conditioned Response)

Classical Conditioning
Before conditioning:
The unconditioned stimulus automatically causes an unconditioned response.

The neutral stimulus causes no response.

During conditioning:
The neutral stimulus is repeatedly paired with the unconditioned stimulus.

After conditioning:
The neutral stimulus becomes a conditioned stimulus, which evokes a conditioned response.
Operant Conditioning

- Defined as: A learning process in which the consequences which follow a response determine whether the behaviour will be repeated
- Behaviour will likely be repeated which has reinforced
- And tend not to be repeated with punishment
**REINFORCEMENT**

- Adding something valuable or desirable

**PUNISHMENT**

- Adding something unpleasant

- Removing something valued or desired

**Avoiding something unpleasant**
Selective Attention

Positive Reinforcement
Positive behavior followed by positive consequences (Manager praises the employee)

Negative Reinforcement
Positive behavior followed by removal of positive consequences (Manager stops nagging the employee)

Punishment
Negative behavior followed by negative consequences (Manager demotes the employee)

Extinction
Negative behavior followed by removal of positive consequences (Manager ignores the behavior)
## COMPARISON OF CLASSICAL AND OPERANT CONDITIONING

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

Looks Like:
Natural bodily reactions & emotions that we can’t control

Sight of pills (neutral stimulus) + Pill gives you a stomach ache = Sight of pills becomes a conditioned stimulus that makes you feel sick.

Must involve a neutral stimulus becoming a conditioned stimulus! With classical conditioning, the response always comes after the conditioned stimulus.

Looks Like:
Behavioral choices that we make: actions

Terrell smiles → Father picks up Terrell → Terrell keeps smiling

AR (accidental response) → R (reinforcement) → DR (deliberate response)

Behavior is not associated with a conditioned stimulus. Behavior is based on past experiences that either encourage us to repeat a certain behavior, or discourage us.
Operant Conditioning
It's time for food. I should press the lever.

Classical Conditioning
There goes the bell. It's time for food.
People are pulled toward behaviours that offer positive incentives and pushed away from behaviors associated with negative incentives.

In other words, differences in behaviour from one person to another or from one situation to another can be traced to the incentives available and the value a person places on those incentives at the time (Bernstein, 2011)

Incentive theory suggests that we are pulled into action by outside incentives.

Incentives can be used to get people to engage in certain behaviors, but they can also be used to get people to stop performing certain actions.
Incentives only become powerful if the individual places importance on the reward.

Rewards have to be obtainable in order to be motivating.

For example, a student will not be motivated to earn a top grade on an exam if the assignment is so difficult that it is not realistically achievable.

According to this theory, behaviour is goal-directed. We behave in ways that allows us to attain desirable stimuli and avoid negative stimuli. The value of a goal is influenced by biological and social factors.
SOCIAL INCENTIVE THEORY

Effort

The employee believes that effort will result in acceptable performance.

Performance

The employee believes that acceptable performance will produce the desired reward.

Reward

The employee values the reward.
3. THE COGNITIVE COMPONENT

- Cognition involves thinking, perceiving, abstracting, synthesising, organising, or otherwise conceptualising the nature of the external world and the self.
- Cognitive theories are framed in terms of having or developing cognitive structures that allow us to make sense of the complexity of the world.
- Cognitive processes help us summarise and reduce the amount of information we encounter by finding higher-order relationships, structures, principles, and rules.
- Cognitions are based on past learning (beliefs and attitudes are developed by imitating/modeling parents) or from cognitive processes (active construction).
- Many beliefs, attitudes and values are based on our own experiences and desires.
• Assimilation is a cognitive process that describes how information is fitted into our existing schema. Our inability to fit new information into our schema results in confusion or incomprehension about the world. This motivates the development of new cognitive structures (accommodation) to make sense of the complexity.

• Desequilibrium allows us to summarise complex information into more generic forms, freeing us from having to keep track of endless pieces of specific information.

• Categories are a tendency to simplify a response learned in one situation to other situations. Example: stereotyping.

• Generalisation results from the repetition of some response or sequences of responses. Example: the habit of smoking.

• Habit is the repetition of behaviour over and over until one no longer needs to think about intentions. Example: driving a car automatically.
Humans are inclined to process information to be consistent with existing categories, beliefs, attitudes, values, stereotypes, and behaviour, ignoring information that does not fit.

When there is an inconsistency between attitudes or behaviours (dissonance), something must change to eliminate the dissonance.

Eg: the disagreeable feeling people experience when one belief or action conflicts with a pre-existing belief or action.
Implicit Theories

- Hypotheses, models, and beliefs about the nature of the external world (world theories) and about what we need to do to satisfy our desires in this world (self theories).
- Often exist at preconscious level and often involve more irrational and intuitive thinking.
Attribution Theory

suggests how we explain the causes of behavior and events

- We credit that behavior either to the situation....
- ...or to the person's internal disposition.

Is Billy a bully because his parents treated him badly and he learned it from them?

Or is Billy a bully because he's just naturally a jerk?
LOCUS OF CONTROL THEORY

Which is your locus of control?

Internal locus of control
You make things happen.

External locus of control
Things happen to you.

cause of behaviour lies within self.

cause of behaviour lies outside self.
There are three motivation components - biological, learning and cognitive.

Each component has unique explanation on how a person is motivated in doing something.

Behaviour is caused by an interaction of biological, learning and cognitive processes:

- Brain circuits are activated
- Learned responses are triggered
- Control is taken by making plans