

PSYC 303 Notes

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Summer 2020

1 Week 1 Notes

Video 2 Two general models that explain certain psychological behavior:

1. One Dimensional
2. Multi Dimensional

1-D Models usually attribute an abnormality to a single cause, ie schizophrenia is caused by a chemical imbalance. Multidimensional models tend to use many of these in concert with each other, some models use the following influences:

1. Biological
2. Behavioral
3. Emotional
4. Cognitive
5. Social and Cultural
6. Developmental

1.1 Biological

Major implication is genetics. Chromosomes are what contain the genes. 46 chromosomes in 23 pairs. Half from mom half from dad. The last pair determine sex. They determine physical and mental attributes of a person.

1.1.1 Genes

There are dominant and recessive genes. If you have one of a dominant gene, you WILL have the disease. Recessive genes will need 2, you are called a carrier. Most psychological disorders are polygenetic, no single gene determines it. Genes contribute less than 50% to psychopathology. Another factor is environment. Genes interact with environment to produce these psychological effects. Two models:

1. Diathesis stress model

- (a) Diathesis: inherited tendency or vulnerability
- (b) Stress: Life event(s)
- (c) People with the same stressor do not produce the same diseases, this is because of the different amount of diathesis they experience.
- (d) This model is useful for substance abuse disorders
- (e) Depression is an example of this genetic vulnerability intertwining with life examples, check study on slides at 12:00
- (f) Neither genes alone or stress alone determine

2. Reciprocal Gene Environment Mode

- (a) Two way interaction between genes and stress
- (b) genes can make people more likely to seek out different life experiences.
- (c) People who have depression might be more likely to seek out depression triggering relationships
- (d) Environmental influences can override the genes
- (e) Rat studies with depressed moms are better with calm moms, non-genomic inheritance. Determined in first week for rats.
- (f) Demonstrates critical periods of development. Also seen in human babies adopted to dysfunctional families.
- (g) Essentially, genes are not the whole story.

1.1.2 Neuroscience

Neuroscience discusses the role of the nervous system and behavior. There are two branches of the human nervous system:

1. The central nervous system, comprising of the brain and spinal cord
2. The peripheral nervous system, somatic and autonomic branches

Here is a overview of neuroscience and brain structure:

1. Main Structures:
 - (a) Brain stem:
 - i. Basic functions like attention
 - ii. Contains hindbrain midbrain, thalamus, hypothalamus
 - (b) Forebrain
 - i. Controls more complex functions like memory
 - ii. Limbic system basal ganglia
2. Hindbrain:
 - (a) Medulla - Heart rate, blood pressure
 - (b) Pons - Coordinates movement and regulates sleep and arousal
 - (c) Cerebellum - involved in physical coordination in short intervals
3. Midbrain:
 - (a) Coordinates movement with sensory input
 - (b) Contains part of the reticular activating system
4. Basil Ganglia
 - (a) Motor Behavior based on cerebellum
5. Limbic System
 - (a) Regulate emotional experiences
 - (b) Amygdala - regulates perception and reaction to aggression and fear, and involved in emotional learning

- (c) Thalamus - receives and integrates sensory information, relays to cerebral cortex.
- (d) Hypothalamus - Eating, drinking aggression, sexual activity. Releases hormones
- (e) Hippocampus - Long term declarative memory and special processing. involves facts

6. Forebrain

- (a) Sensory emotional and cognitive processing
- (b) Cerebral cortex contains two hemispheres:
 - i. Left: verbal and other cognitive processes
 - ii. Right: Perceives world and creates images Each has 4 lobes:
 - A. Frontal - Thinking and reasoning
 - B. Parietal - Touch recognition
 - C. Occipital - Integrates visual input
 - D. Temporal - Temporal - Sights and sounds, storage for long term memory

7. Somatic NS:

- (a) Controls voluntary movement

8. Autonomic NS:

- (a) Sympathetic and parasympathetic branches
- (b) Regulates cardiovascular system and body temp
- (c) Regulates endocrine system.

9. Sympathetic division deploys body in stressful situations, effects include increased heart rate and increased respiration, mobilize body in a situation. Useful when there is immediate danger.

10. If these effects become too much, the parasympathetic system takes over.

11. People with anxiety use outside methods to activate the parasympathetic branch.

12. Endocrine system:

- (a) Regulates release of hormones
- (b) hormones active in very small amounts
- (c) The endocrine system and nervous system are integrated in the HPA axis

13. Neurons:

- (a) Soma - cell body
- (b) Dendrites - Branches that receive messages from other neurons
- (c) Axon - Trunk that sends messages to other neurons
- (d) Myelin Sheath - Covers the axon that speeds impulses
- (e) Terminal Buttons - Forms junction with dendrite of other neurons.
- (f) They operate electronically, but communicate chemically
- (g) A breakdown of this is on 40:00

14. Function of main types of neurotransmitters:

- (a) Agonists - increases effect of a neurotransmitter
- (b) Antagonists - inhibits neurons either directly or indirectly
- (c) Inverse Agonists - produces opposite effects to a neurotransmitter
- (d) Most drugs are agonistic or antagonistic

15. Types of these:

- (a) Serotonin - mood, eating, sleeping, arousal
- (b) Gamma aminobutyric acid (GABA) - inhibits other neurons, involuntary motor action, alcohol inhibits GABA
- (c) Glutamate - excitatory, opposite of GABA, increases other neurons
- (d) Norepinephrine - Adrenaline, autonomic NS, sympathetic arousal, fight or flight
- (e) Dopamine - Processing motor movements, attention, reinforces effects of drugs which are abused. Parkinson's happens with no dopamine. Sex and Gaming give dopamine

16. Manipulation of serotonin is a treatment for depression. Prozac is an SSRI. It makes more serotonin available.
17. We have neuroimaging but people had to autopsy people before this.
18. Paul Broca identified the speech area which was damaged in one man that spoke bad but not another man.
19. Two types of Neuroimaging:
 - (a) Structural Imaging, actual brain itself. Does the brain look the same as someone who does not have this disorder?
 - (b) Functional Imaging, is the brain doing what it should?
20. Examining Structure:
 - (a) CAT Scan
 - i. Computerized axial tomography
 - ii. Multiple x-rays
 - iii. Risks
 - (b) MRI
 - i. Magnetic Resonance Imaging
 - ii. More accurate than a CAT Scan
 - iii. Radio signals excite the brain tissue
 - iv. Fewer risks
21. Examining function:
 - (a) PET Scan
 - i. Positron Emission Tomography
 - ii. Blood flow changes via a tracer
 - (b) SPECT
 - i. Single photon emission tomography
 - ii. Different tracer
 - iii. Less precise than a PET but cheaper
 - iv. Faster than PET

- (c) These both can help us determine what's happening in the brain that causes psych disorders

22. Implications of Neuroscience for Psychopathology:

- (a) Relations between brain and abnormal behavior such as OCD and Schizophrenia
- (b) Psychosocial influences can change brain structure and function
- (c) Therapy can also change brain structure and function along with medication

1.1.3 Behavioral

1. Classical Conditioning (Pavlov)

- (a) Association of two things that go together
- (b) Condition stimulus: Metronome
- (c) Unconditioned stimulus: Meat
- (d) Conditioned response: Salivation
- (e) Exclusivity is important

2. Operant Conditioning (Skinner)

- (a) Method of learning to repeat behaviour with desirable consequences and suppress behavior with bad consequences.
- (b) Reinforcement and Punishment

3. Learned Helplessness (Seligman)

- (a) Uncontrollable shock
- (b) Anxiety and depression results from exposure to uncontrollable punishment which leads to generalized feelings of helplessness
- (c) Lack of control over environment.
- (d) Generalized sense of helplessness, leads to anxiety

4. Social Learning (Bandura)

- (a) Modeling and observational learning

- (b) Learn behaviors through observation and imitation of others

5. Prepared Learning

- (a) Preparedness inherited from ancestors (biologically driven)
- (b) Good evolutionary reasons to learn some associations
- (c) People fear social rejection due to a need to hunt in packs.

1.1.4 Cognitive Models

1. Psychopathology results from maladaptive thinking patterns
2. negative attributional style, hopelessness
3. Dissociation between behavior and consciousness
4. implicit memory - being affected by an event that you do not remember, people may not remember car accident but still affected by it mentally
5. Stroop Paradigm
 - (a) Name color of word which is printed
 - (b) People with disorders have trouble identifying colors of things in the anxiety block
6. Emotions
 - (a) To elicit or evoke action
 - (b) Tied to several forms of psychopathology such as mood disorders
 - (c) Moods are persistent periods of emotions
 - (d) Components of emotion - Behavior, Physiology, Cognition
 - (e) Suppressing negative emotions increases SNS activity
 - (f) Dysregulated emotions are key features of many mental disorders
7. Chronic hostility increases risk for heart disease, efficiency of heart pumping is decreased when angry

1.1.5 Culture

1. Defined as the belief systems and values that influence customs, norms, practices and social institutions
2. Important to understand the influence of culture on an individual's behavior
3. Multicultural Considerations:
 - (a) Presentation of Symptoms
 - (b) Cultural meanings of illnesses
 - (c) Whether an illness is real or imagined, etc.
4. Gender Differences
 - (a) Men and women may differ in emotional experience and expression such as insect phobia, alcoholism and eating disorders
 - (b) May be related to the social gender roles.
5. Social Support
 - (a) Low social support related to mortality, disease and psychopathology
 - (b) Especially important in the elderly
6. Social Stigma
 - (a) May limit expression of mental health problems
 - (b) May discourage treatment seeking

1.1.6 Developmental Influences

1. Life-Span developmental perspective
 - (a) Addresses developmental changes
 - (b) Influence the presentation of psychological symptoms
 - (c) Influence and constrain what is normal and abnormal
2. The principle of equifinality

- (a) Form developmental psychopathology
- (b) Several paths to a given outcome
- (c) Paths vary by developmental stage

Video 1 What is a psychological disorder? We go by 3 Ds:

1. Psychological Dysfunction
 - (a) A breakdown in cognitive emotional or behavioral functioning, anxiety vs panic attacks
 - (b) Limitation - These disorders exist on a continuum
2. Distress or impairment
 - (a) Difficult in performing expected roles
 - (b) Limitations - Can be normal or expected and distress can be absent in a disorder, like anorexia
3. Deviates from average or cultural Norms
 - (a) Limitation - Not all deviant behaviors are signs of mental disorder
 - (b) Some things can be atypical and not pathological
4. All of these by themselves do not determine illness, they all have to be considered at the same time when considering a disorder

Here is the DSM-5 Definition:

1. A Mental disorder is a syndrome characterized by clinical significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological biological or developmental processes underlying mental function.

Psychopathology is the scientific study of psychological disorders. Involves studying:

1. Clinical Description
2. Causation

3. Treatment and outcome -alleviate suffering

Various mental health professionals study this way:

1. Ph.D
2. Psy.D
3. Ed.D : All of the above are mostly psychologists
4. M.D. : Psychiatrist
5. Psychiatric Social worker
6. Psychiatric Nurse
7. Family Therapist

Adopt Scientist-Practitioner model by doing the following:

1. Consumers of science stay current with research in the field
2. Evaluators of Science evaluate their own work and treatment
3. Creators of Science conduct their own research

Historical Conceptions of Abnormal Behavior:

1. Supernatural
 - (a) Agents outside our bodies cause these behaviors
 - (b) Evil spirits cause these, work of the devil , witches
 - (c) Barbaric treatments
 - (d) Exorcisms, torture and beatings among others
 - (e) In the Renaissance, a Swiss psychologist attributed mental illness to gravity (inspired lunatic)
2. Biological
 - (a) Mental illness is caused by circumstance similar to psychical disease

- (b) Hippocrates - Believed that all illness had natural causes, brain is seat of wisdom consciousness intelligence and emotion.
- (c) Galen - Linked abnormality with brain chemical imbalances, an excess or deficit in any of the body's fluids would cause mental illness
- (d) Treatment involved regulating the environment, bloodletting and purging
- (e) Renaissance - Determined that psychopathology has a medical/biological origin
- (f) Rise of asylums which treat mentally ill
- (g) Asylum treatments much of the same, involving restraints, purges and bloodletting.

3. Psychological

- (a) In early 19th century, Moral treatment came to be
- (b) People with mental illness should be treated normally
- (c) Pinel - Introduced these treatments along with Tuke and Rush
- (d) Dorothea Dix started the Mental Hygiene movement
- (e) Became dormant, but later Reemerged in three school of thought

Here are the Three schools of thought of The Psychological Explanation in the 20th century:

1. Psychoanalytic

- (a) Figures include: Sigmund Freud, Josef Breuer
- (b) Behaviors stem from unconscious processes
- (c) Treatment: psychoanalysis via hypnosis and dream analysis

2. Humanistic

- (a) Outgrowth of Freud
- (b) Figures include: Carl Jung, Alfred Adler, Abraham Maslow, Carl Rogers

- (c) Themes: Optimism about human nature, People should strive for self-actualization, people are innately good
- (d) Treatment is Person-centered, conveys empathy, unconditional positive regard/acceptance

3. Behavioral

- (a) Figures include: Ivan Pavlov, Watson, BF Skinner
- (b) Focuses on observable behavior and environmental determinants
- (c) Scientific approach
- (d) Less on what was going on in the mind and more what was happening in the environment to influence this
- (e) Treatment is based in behavior as well
- (f) Use behavioral principles to address disorders
- (g) Focus on present

4. Modern views

- (a) Psychopathology is a product of multiple influences
- (b) One-dimensional models are incomplete
- (c) Defining abnormal behavior is complex
- (d) Supernatural has no place in modern scientific world