Psychoanalytic

Freud’s psychosexual theory
- Structure: id (pleasure principle), ego (reality principle), superego (morals, ideals)
- Levels of awareness: conscious, preconscious, unconscious
- Development: oral, anal, phallic (Oedipal complex, penis envy), latency, genital
- Fixations
- Defense mechanisms - reduce anxiety
  - Repression (primary)
  - Regression
  - Reaction formation
  - Rationalization
  - Displacement
  - Sublimation
  - Projection
  - Denial
- Neo-Freudians
  - Adler—social, not sexual tensions
    - Birth order, inferiority complex
  - Horney—rejected penis envy idea
  - Carl Jung—collective unconscious
- Assessment
  - Projective tests
    - Rorschach
    - TAT - Thematic Apperception Test
    - Draw-a-person
    - Sentence completion
- Evaluation:
  - Repression often not shown (vivid memory often results after trauma)
  - Terror management theory

Social-cognitive

Reciprocal determinism—interplay of
- Personal factors/internal cognition
- Behavior
- Environment
- Personal control (Julian Rotter)
- External locus of control
- Internal locus of control
- Without internal locus, learned helplessness results
- Explanatory style (Martin Seligman)
  - Optimistic
    - Unstable, specific, external
  - Pessimistic
    - Stable, global, internal
- Bandura
  - Personality influenced by observational learning, outside influences (Bobo doll study)
  - Self-efficacy (belief in ability to do things that lead to positive outcomes)

The self

Hazel Markus—“possible selves”
- Spotlight effect
- Self-referencing effect
- Self-esteem
  - Defensive vs. secure
- Self-serving bias

Humanism

Maslow—self-actualization
- Hierarchy of needs
  - Safety—security—love—self-esteem—self-actualization
- Carl Rogers—person-centered
  - Genuineness
  - Unconditional positive regard
  - Empathy

Trait theory

Greeks—4 humors (choleric, sanguine, melancholic, phlegmatic)
- Allport (student of Freud)
- Eysenck—unstable/stable; introverted/extroverted
- Costa & McCrae (Big 5)
  - OCEAN (openness, conscientiousness, extraversion, agreeableness, neuroticism)
- Assessment
  - MMPI (used factor analysis, empirically derived)
  - Cattell’s 16PF
  - Person-situation controversy
    - Walter Mischel—emphasizes power of situational factors
  - Expressive style—thin slices
  - Barnum effect—astrology, etc.
STRESS & HEALTH

Stress response

Stressor—leads to eustress or distress
  Depends on appraisal
Fight-or-flight—Walter Cannon
Adrenal glands
  * Epinephrine (quick response)
  * Glucocorticoids (slow response)
General Adaptation Syndrome—Selye
  Alarm—activation of sympathetic nervous system
Resistance—deal with/fight
  Exhaustion—breakdown of immune system (telomeres in DNA affected, can’t replicate); hippocampus can’t make new memories as well
Illness
  Heart (Friedman & Rosenman study)
    Type A—anger, reactive vs.
    Type B—relaxed
    69% of heart attack victims were A
Immune system impaired
  * B lymphocytes (fight bacteria—formed in bone marrow)
  * T lymphocytes (formed in thymus, fight viruses, cancers)
  * Macrophages (“big eaters"
Conditioning the immune system
  (Ader & Cohen study)
    * Sweetened water with immune suppressing drug—created classically conditioned immune suppression
    * Placebo effect in illness?

Coping

Problem-focused (address stressor)
Emotion-focused (seeks support from others)
Exercise
Biofeedback
Meditation
Spiritual connection

Conflict

Approach-approach
  Win-win situation
Avoidance-avoidance
  Lose-lose situation
Approach-avoidance
  One choice, pros and cons

Obesity & health

Physiology
  Fat cells—30-40 million
  Divide if too full, can’t get rid of fat cells
Set-point/metabolism
  Fat cells—low metabolic rate
  Metabolism slows when fat cells are deprived, tries to maintain fat level
Genetics
  Adopted children’s weight not correlated to adoptive parents
  Identical twins correlation +.72
  Fraternal twins correlation +.32
Chemical effect
  Leptin in rats—when up, weight down

Losing weight?
  2/3 of women, 1/3 of men trying
# LEARNING

## Classical conditioning

- **Associative learning**
  - allows prediction (associate stimuli)
  - respondent behavior
- Pavlov’s dogs (1904 Nobel prize)
  * US (food) leads to:
    - UR (salivation to food)
  * CS (bell) becomes associated with US, leads to:
  * CR (salivation to bell)

**Elements of classical conditioning:**
- Acquisition
- Extinction
- Spontaneous recovery
- Generalization
- Discrimination

**Implications:**
- Rescorla’s research on predictability
- Garcia’s research of biological predispositions
  * easier to condition food aversions to taste rather than sight or sound
  * easiest to condition behaviors that promote survival

**Applications:**
- Aversive conditioning—pairing a negative stimulus with a desired stimulus can help kick bad habits
- Drug addicts sometimes have cravings related to environment
- Classical conditioning of immune response (Ader & Cohen study)
- Extinction can help cure phobias

## Operant conditioning

- **Associative learning**
  - consequences of behavior
  - operant behavior
- Thorndike’s Law of Effect
- Skinner
  * Operant chamber (Skinner Box)
  * Shaping
  - Successive approximations
  * Discrimination

**Reinforcement**
- Positive reinforcement—pleasurable stimulus after a response (strengthens the response)
- Negative reinforcement—reduces or removes a negative stimulus (still strengthens the response)
- * Primary reinforcers (water, food, etc.) vs. secondary reinforcers (money, etc.)
- * Schedules of reinforcement
  - Continuous (rapid learning)
  - Partial (intermittent)
    - Ratio (certain # of behaviors)
      * Fixed (5 visits to restaurant = free meal)
      * Variable (slot machine)
    - Interval (certain period of time)
      * Fixed (ex. each day @ 3 p.m.)
      * Variable (ex. shooting stars)

**Punishment**
- Positive punishment (add bad thing)
- Negative punishment (take away good)
  * Both create avoidance behaviors (ex. lie—becomes neg. reinforced)

## Latest contributions

- Latent learning (Tolman)
  - cognitive maps (demonstrate learning after award is given)
- Intrinsic motivation (desire to do something for its own sake)
  - When rewards are given for activity that is intrinsically rewarding, enjoyment declines (overjustification effect)
- Extrinsic motivation (desire to do something for reward)
  - Should be recognition for a job well done
- Biological predispositions
  - Easier to condition behaviors that match natural behavior
- Legacy of Skinnerian thinking
  - Criticism of deterministic philosophy, dehumanization, loss of personal freedom

**Observational learning (modeling)**
- Mirror neurons (biological basis)
  - promote empathy
- Bandura’s Bobo doll study
  - Child watches adult, mimics
  - Increase of violence, aggression
- Media influence
  - Violent crimes—87% on TV, 13% real life
  - Violent action is correlated to viewing violence (media, video games) - leads to desensitization
MEMORY

ENCODING
- Controlled by attention
- Types:
  - Acoustic
  - Visual
  - Semantic
- Affected by:
  - Chunking
  - Self-reference effect
  - Elaboration
  - Rehearsal
  - Spacing
  - Hierarchies
  - Next-in-line effect
  - Serial position effect
    - Primacy effect
    - Recency effect
  - Mnemonic devices
    - Peg-words
    - Method of loci
    - Alliteration
    - Music

STORAGE
- Information-processing theory
  - Sensory $\leftrightarrow$ STM $\leftrightarrow$ LTM
- Sensory memory (Sperling)
  - Iconic
  - Echoic
- STM
  - 7 +/- 2 chunks
- LTM
  - Explicit (declarative)
    - Semantic memory (facts)
    - Episodic memory (incidents)
      - Flashbulb memory
        - (emotional incidents)
      - Prospective memory (remember to do something in the future)

RETRIEVAL
- Aids (retrieval cues):
  - Context
  - State-dependent
  - Mood-congruent
  - Priming
- Recognition vs. recall
- Retrieval failure:
  - Forgetting curve (Ebbinghaus)
  - Tip-of-the-tongue
  - Reconstructive memory (Elizabeth Loftus)
    - *Misinformation effect
    - *Source amnesia
    - *Rosy retrospection
  - Interference
    - Proactive
    - Retroactive
  - Amnesia
    - Anterograde
    - Retrograde
  - Repression

BIOLOGICAL FACTORS
- Lashley’s research
- Hippocampus
- Amygdala
- Long-term potentiation
- Cerebellum
- Stress hormones
**PHYSICAL**

- **Prenatal**
  - Zygote
  - Embryo (2-8 wks)
  - Fetus (8+ wks)

- **Teratogens**
  - Fetal alcohol syndrome
  - Radiation
    - (8-15th week, migration)
    - Radiation: stops short
    - FAS: too far

- **Reflexes**
  - Moro
  - Rooting
  - Babinski
  - Palmar

- **Maturation**
  - Cephalocaudal
  - Proximodistal

- **Puberty**
  - Primary sex characteristics
  - Secondary sex characteristics
  - Frontal lobe development

- **Old age**
  - Recall vs. recognition
  - Decay of fluid intelligence
  - Consistency of crystallized intelligence
  - Dementia
  - Alzheimer’s disease

---

**COGNITIVE**

- **Schemas**
  - Assimilation
  - Accommodation

- **Sensorimotor stage (0-2)**
  - Object permanence (6 mos)

- **Preoperational stage (2-7)**
  - Egocentrism
  - Animism
  - Symbolic thought begins

- **Concrete operational stage (8-12)**
  - Conservation
    - Volume
    - Area
    - Number
  - Reversibility

- **Formal operational stage (12+)**
  - Hypothesis testing
  - Abstract thinking
  - Megacognition

- **Self concept**
  - 18 mo.—rouge test

---

**SOCIAL**

- **Lev Vygotsky (social-cognitive)**
  - Zone of proximal development
  - Mentors

- **Lorenz’s study of imprinting**
  - Harlow’s research on touch

- **Ainsworth’s attachment theory**
  - Strange situation paradigm
    - Secure attachment (60%)
    - Insecure attachment
      - Ambivalent
      - Avoidant

- **Baumrind’s parenting styles**
  - Authoritarian
  - Authoritative
  - Permissive

- **Erikson’s stages (psychosocial)**
  - Trust vs. mistrust
    - (0-1) basic trust
  - Autonomy vs. shame & doubt
    - (1-2) independence
  - Initiative vs. guilt
    - (3-5) initiation of tasks
  - Competence vs. inferiority
    - (6-12) accomplishment
  - Identity vs. role confusion
    - (13-20s) sense of self
  - Intimacy vs. isolation
    - (20s to 40s) relationship
  - Generativity vs. stagnation
    - (40s to 60s) contribution
  - Integrity vs. despair

---

**MORAL**

- **Kohlberg’s theory**
  - Preconventional morality
    - Avoiding punishment
  - Conventional morality
    - Accepting rules of society
  - Postconventional morality
    - Ethics, abstract morality
    - No absolutes

- **Carol Gilligan**
  - Men - Rules & ethics
  - Women - Relationships

- **Jonathan Haidt**
  - Social intuitionist theory
  - Gut-level reactions
    - (limbic system)

---

**METHODS OF STUDY**

- **Longitudinal research**
- **Cross-sectional research**

---

**STAGES OF DEATH/DYING** (Kubler-Ross)

- Denial … Anger … Bargaining … Depression … Acceptance
Neural communication

Resting potential
-70 mV inside
Neuron is polarized
Action potential (all-or-none)
Neurotransmitters bind to dendrites
Neuron reaches −55 mV
Becomes depolarized
Sodium/potassium ions
Signal moves down the axon
Neurotransmitters release to synapse
Must repolarize
Reuptake of neurotransmitters
Return to −70 mV
Refractory period (can’t fire)

Myelin sheath
Insulates motor neurons
Speeds message
Decay of myelin sheath
- multiple sclerosis
Intelligence

Excitatory neurotransmitters
Acetylcholine (skeletal muscles)
Serotonin (depression/general well-being)
Dopamine (high - schizophrenia; low—depression)
Norepinephrine (Alertness, linked to fight-or-flight)
Endorphins (pain relief)
Inhibitory neurotransmitter (GABA)
Effect of agonists/antagonists

The brain
Plasticity—neurons can be used for new purposes
Hindbrain:
Cerebellum—coordination
Medulla—breathing, heartbeat
Pons—sleep, arousal, dreams
Reticular formation—arousal
Midbrain:
At the intersection of forebrain & hindbrain (spatial awareness)
Forebrain:
Thalamus—sensory switchboard
Limbic system—emotion
Hippocampus (memory)
Amygdala (fear, anger)
Hypothalamus (biological needs, e.g. hunger, sex, thirst)
Cerebrum/cerebral cortex
Prefrontal cortex (planning, organization, risk assessment)
Frontal lobes (motor cortex, mirror neurons)
* Broca’s area (speech)
Parietal lobes (somatosensory cortex)
* Angular gyrus
Temporal lobes (auditory cortex)
* Wernicke’s area
Occipital lobes (visual cortex)

Organization of the nervous system
CNS
Peripheral nervous system
Brain and spinal cord
Somatic nervous system
Autonomic nervous system
Afferent neurons
Efferent neurons
Sympathetic nervous system
Parasympathetic nervous system
Interneurons

Hemispheric specialization
Split-brain surgery (corpus callosum severed)
*Used to treat uncontrolled seizures
Seen in left visual field, processed in rt. hemisphere

Methods of study
Structure
Lesions
CT scan
MRI
Function
EEG
PET scan
fMRI

The endocrine system
Pituitary—master gland (directed by the hypothalamus)
Biochemically the same as neurotransmitters
Adrenal gland—stress hormones
# Perspectives

- Introspection
  - Wilhelm Wundt—1st lab, Germany
  - William James—1st text, Harvard
- Structuralism
- Functionalism
- Gestalt—total experience “the whole”
- Perception
- Psychoanalysis—Freud
- Behaviorism—Watson (Little Albert), Skinner (operant conditioning)
- Humanism (Maslow, Rogers)
- Biological—brain chemistry, hormones, etc.
- Evolutionary (sociobiology)—impact of traits that promote survival of species
- Cognitive—thinking patterns
- Sociocultural—environment

# History & Research

## Psychological Research

- Limits of intuition
  - Hindsight bias
  - Overconfidence
  - Confirmation bias
- Scientific attitude
  - Curiosity
  - Skepticism
  - Humility
- Scientific method
  - Theories
  - Hypothesis
  - Operational definitions
  - Replication
- Methodology
  - Case study
  - Survey
    - Wording effects
    - Random sampling
    - False consensus effect
  - Naturalistic observation
    * Must avoid Hawthorne Effect
- Correlational studies
  - Prediction
  - NOT CAUSATION
  - Illusory correlation
  - Superstition
  - Experiment
    (see experimentation)

# Experimentation

- Cause & effect
- Procedure:
  - Blind study
  - Double-blind study
  - Experimental condition vs. Control condition
  - Independent variable
    - Experimenter manipulates
  - Dependent variable
    - Experimenter measures
  - Confounding variables
  - Random selection
  - Random assignment

# Measuring Data

- Descriptive statistics
  - Central tendency (averages)
    - Mean
    - Median
    - Mode
    - Normal curve
  - Correlations (relationships)
    - Scatterplot
    - Correlation coefficient
- Variation
  - Range
  - Standard deviation
- Inferential statistics
  - Do my results matter?
    * Sample size influence
    * Significant differences
  - p<.05 (alpha level)

# Ethics

- Animal research
  - Clear scientific purpose
  - Humane treatment
  - Legal acquisition of subjects
  - Limit suffering to least feasible
- Human research
  - Informed consent
  - Limit deception
  - No coercion
  - Protect from harm
  - Confidentiality
  - Debrief afterwards
**The basics**
- Sensation vs. perception
- Bottom-up processing
- Top-down processing
- Prosopagnosia
- Thresholds
- Psychophysics
  - Absolute threshold
  - Signal detection theory
  - Subliminal messages
  - Difference threshold (JND)
  - Weber’s Law/Fechner’s Law
- Sensory adaptation
- Transduction
- Receptors

**Other senses**
- Touch
  - Pressure, temperature, pain
  - Nociceptors
  - Gate-control theory
- Taste (gustatory sense - chemical)
  - Sweet, sour, salty, bitter, umami
  - Taste buds
  - Sensory interaction
  - McGurk effect
- Smell (olfactory sense - chemical)
  - Does not go through the thalamus
  - Direct route to limbic system
- Kinesthesia
- Vestibular sense
  - Semicircular canals
- Synaesthesia

**SENSATION**

**Vision**
- Light energy
  - Wavelength (color)
  - Amplitude (brightness)
- Parts of the eye
  - Cornea
  - Pupil
  - Lens
    - Accommodation
  - Retina (transduction here)
    - Rods (120 million)
    - Cones (6 million)
  - Fovea
  - Bipolar cells
  - Ganglion cells
  - Optic nerve to occipital lobe
  - Blind spot
- Visual acuity
  - Nearsightedness/farsightedness
- Feature detectors
- Parallel processing
- Blindsight
- Change blindness
  - Retina to thalamus to cortex
- Color interpretation
  - Young-Helmholtz theory
  - Subtractive color mixing
  - Additive color mixing
  - Opponent-process theory
  - Afterimages
- Color constancy

**Audition (hearing)**
- Sound energy
  - Frequency (pitch)
  - Amplitude (loudness)
  - Measured in dB (decibels)
- Every 10 dB = 10 times louder
- Parts of the ear
  - Outer ear
    - Pinna (visible part)
  - Auditory canal
  - Middle ear
    - Tympanic membrane (eardrum)
    - Ossicles (hammer, anvil, stirrup)
  - Inner ear
    - Oval window
    - Cochlea
      - Basilar membrane
      - Hair cells (transduction here)
      - Organ of Corti
    - Semicircular canals (NOT for hearing)
- Auditory nerve to temporal lobe
- Perceiving sound
  - Place theory
  - Frequency theory
  - Volley principle
- Sound localization
- Hearing loss
  - Sensorineural hearing loss
  - Cochlear implant
  - Conduction hearing loss
The basics

Visual perception

Perceptual organization

Other principles

- Sensation vs. perception
- Bottom-up processing
- Top-down processing
- Prosopagnosia
- Selective attention
- Cocktail party effect
- Inattentional (change) blindness
- Choice blindness
- Visual capture

- Depth perception
  - Binocular cues
  - Retinal disparity
  - Convergence
  - Visual cliff
- Monocular cues
  - Linear perspective
  - Relative size
  - Interposition
  - Relative clarity
  - Texture gradient
  - Relative height
  - Light & shadow

- Motion perception
  - Relative motion (motion parallax)
  - Stroboscopic movement
  - Phi phenomenon

- Constancies
  - Color constancy
  - Size constancy
  - Shape constancy
  - Lightness constancy

- Illusions
  - Muller-Lyer illusion
  - Cultural influence
  - Ponzo illusion
  - Moon illusion
  - Sensory deprivation
  - Critical periods

- Perceptual adaptation
- Perceptual set
- Context effects
- Human factors
- ESP (extra-sensory perception)?
  - Parapsychology
  - Telepathy
  - Clairvoyance
  - Precognition
  - Psychokinesis
  - Way to test: Ganzfeld procedure

- Figure-ground relationship

- Gestalt principles
  - Proximity
  - Similarity
  - Continuity
  - Connectedness
  - Closure

- Critical periods

- Culture influence
**Biology of sleep**

- Biological rhythms
  - Circadian rhythm (25 hr cycle)
  - Light (superchiasmic nucleus)
  - Pineal gland (near thalamus)
  - Melatonin
  - Adenosine (sleep-inducing)

- Sleep stages
  - Prior to stage 1 (alpha waves)
  - Stage 1 (theta waves) 5 min.
  - Hypnagogic sensations
  - Stage 2 (K-complexes, sleep spindles) approx. 20 minutes
  - Stage 3 (<50% delta waves) approx. 20 minutes
  - Stage 4 (>50% delta waves) approx. 50 minutes
  - Stage 3 & 4—slow wave sleep

- Order of stages
  - 1, 2, 3, 4, 2, REM, 2, 3, 4, 2, REM

- REM—paradoxical sleep
  - Active brain, paralyzed body

- Benefits
  - Memory consolidation
  - Concentration
  - Mood
  - Moderates hunger/reduces obesity
  - Improves immune response

- Disorders
  - Insomnia (10-15% of adults)
  - Narcolepsy
  - Sleep apnea
  - Night terrors (stage 4)
  - Sleepwalking (stage 4)

**Dreaming**

- Freud’s analysis
  - Manifest content vs.
  - Latent content

- Information-processing theory
  - Filing experience
  - Synthesizing memory
  - Pruning connections
  - Build neural pathways
  - Activation-synthesis theory
  - Pons generates neural firing

- Lucid dreams
  - Conscious awareness of dream state

**Psychoactive drugs**

- Tolerance/withdrawal
  - Involves neuroadaptation
  - Addiction

- Depressants
  - Alcohol
    - Reduces inhibitions
    - Impairs activity of frontal lobe
    - Disrupts formation of LTM
  - Barbiturates (tranquilizers)
    - Reduce anxiety, mimic alcohol
  - Opiates (endorphin agonists)
    - Morphine, heroin, oxycontin

- Stimulants
  - Amphetamines/meth
  - Cocaine—rush/crash
  - Ecstasy—also a hallucinogen
    - Stimulates serotonin
    - Interferes w/sleep, impairs memory, reduces immune response

- Hallucinogens
  - LSD—serotonin agonist
  - Marijuana—cannabinoid agonist
    - Disrupts memory formation
    - Reverse tolerance

**Hypnosis**

- Mesmer (18th century)
- Susceptibility
  - Creativity, desire influences
- Therapeutic capacity
  - Posthypnotic suggestions
  - Pain alleviation
  - Selective attention?

- Theories:
  - Social influence theory
    - Emphasizes desire of subjects to do well
  - Divided consciousness theory
    - Emphasizes dissociation
    - Hilgard’s “hidden observer”
**Physiology of hunger**

- Keys’ research
- Cannon’s research
- Body chemistry
  - Insulin up, glucose down
  - Hypothalamus stimulation
    - Lateral—hunger increases
    - Orexin produced
  - Ventromedial—hunger declines
- Hormones
  - Ghrelin—hunger increases
  - PYY—suppresses hunger
- Proteins
  - Leptin—decreases hunger
  - Orexin—increases hunger

**Psychology of hunger**

- Neophobia (avoidance of unfamiliar food)
- Eating disorders
  - Anorexia nervosa
    - At least 15% underweight
    - Continue to view self as fat
  - Bulimia nervosa
    - Binge-purge pattern
    - Not necessarily low weight
- Obesity (30% in US)

**Theories of motivation**

- Instinct theory (evolutionary)
  - fixed patterns, unlearned
- Drive-reduction theory (Clark Hull)
  - Object is homeostasis
  - Pulled by incentives (external)
- Arousal theory
  - Yerkes-Dodson Law
    - Easy task—high arousal
    - Difficult task—moderate
- Maslow’s hierarchy of needs
  - Physiological at base, then safety, belonging & love, esteem, self-actualization, transcendence
  - Need to belong
    - Ostracism—activates anterior cingulate cortex (also activates with pain)

**Physiology of sex**

- Kinsey report
- Masters & Johnson research
- Sexual response cycle
  - Excitement—plateau—orgasm—resolution (refractory period)
- Sexual disorders
  - Premature ejaculation
  - Erectile dysfunction
  - Orgasmic disorder
- Hormones
  - Estrogen / androgens (testosterone)

**Psychology of sex**

- External stimuli
  - Habituation occurs
  - Decreased satisfaction w/sexual partners
- Gender roles/gender identity
- Sexual orientation
  - Estimated 3-4% men, 1-2% women
  - But could be higher (response bias)
  - Identical twin studies support genetic basis
  - Hypothalamus differences (LeVay)
  - Anterior commissure differences
  - Fraternal birth order effect
  - Same sex attraction in animals (6-10%)
  - Finger length/fingerprint ridges
    - (7th/16th week of development)

**Achievement motivation**

- Flow
- I/O psychology
- Personnel psychology
  - To avoid the interviewer illusion
    - Structured interviews
    - 360-degree feedback
- Grit (determination, breeds success)
- Theory X vs. Theory Y
- Task leadership vs. social leadership
  - Great person theory
  - Transformational leadership
EMOTION

Theories

Emotion—arousal, expressive behavior, and conscious experience
James-Lange theory: physiological response 1st, emotion 2nd
Cannon-Bard theory: physiological response at the same time as experience of emotion
Schachter’s two-factor theory: physiological arousal, then appraisal (cognition) creating emotion label
Spillover effect: Stirred up physiological state can be misinterpreted as emotional state
Zajonc’s theory: Subliminal processing of emotions (neural pathway is from thalamus to amygdale)
Lazarus: Cognitive appraisal controls emotion

Expressed emotion

Nonverbal communication
- Easily detect threatening cues
- Thin slices (quick views of interactions) - some better at reading
Gender differences
- Women tend to be more able to read non-verbal cues
- Also tend to communicate emotion better
Ekman’s research
Microexpressions
Universal emotional expressions
Happiness, surprise, fear, sadness, anger, disgust
Facial feedback: we feel the emotion we show
Behavior feedback: we feel the emotion our body looks like it’s feeling
Empathy: feeling another’s emotion
Mirror neurons
Reading emotion: autistic people show problems in reading emotional states of others

Experience of emotion

Emotion = valence (pleasant/unpleasant) and arousal (low/high)
Fear—learn early, through conditioning, observation
- Amygdala key
- Anterior cingulated cortex
Anger -
Catharsis hypothesis—release
But creates more anger
Reinforcement
How to control?
- Waiting to act
- Exercise
- Forgiveness
Happiness (subjective well-being)
- * Feel-good, do-good phenomenon
- * People who value love over money report higher life satisfaction
- * Adaptation-level phenomenon
- * Relative deprivation principle
Predictors: high self-esteem, optimism, close friendships/marriage, engaging work, meaningful faith, good sleep, exercise
Contributors: know that wealth doesn’t make you happy, control your time, act happy, seek enjoyable work, exercise, sleep, make relationships a top priority, help others, be grateful, seek spiritual fulfillment

Nervous system

Autonomic arousal
- Sympathetic nervous system: pupils dilate, dry mouth, perspiration, fast breathing, accelerated heart rate, slowed digestion, stress hormones released (fight-or-flight)
- Parasympathetic nervous system: returns body to original calm state
**Concepts**

Metacognition—wow!
Organization:
- Hierarchies
- Prototypes

**Problem solving**

Barriers:
- Fixations:
  - Functional fixedness
  - Mental set
  - Confirmation bias
  - Overconfidence

Approaches:
- Trial and error
- Insight
- Algorithm

Heuristics
- Representativeness heuristic
  - Based on prototypes
- Availability heuristic
  - Based on vivid experience

Issues:
- Framing (wording)
- Belief bias
- Belief perseverance
- Illusory correlation
- Memory reconstruction
- Self-serving bias

**Intuition**

Factors:
- Blindsight
- Right-brain thinking
- Moral thinking (Haidt’s theory)
- Automatic processing/implicit memory
- Creativity
- Thin slices
- Subliminal stimulation
- Microexpressions
- Dual attitude system
  - Unconscious/conscious
  - Implicit/explicit
- Gut-level/rational

**About Language**

Structure
- Phonemes
- Morphemes
- Grammar
  - Semantics
  - Syntax

Appearance
- Babbling (approx. 4 months)
- One-word stage (1 year)
- Two-word stage (telegraphic speech)
  - At 1 1/2 years
  - No 3 word stage

**Theories of language development**

Skinner—nurture
Behaviorist explanation
- Follows usual learning pattern
  - (Reinforcement/punishment)

Chomsky—nature
Language acquisition device (innate)
Evidence:
- * Overregularization of language
  - (or overgeneralization)
  - Ex: “I goed to the store.”
- * Common elements
  - Surface structure (syntax)
  - Deep structure (semantics)
- * Critical period
  - Age 7 for language acquisition
  - Cochlear implants
  - Best results 2-4 year olds

**Language & Thinking**

Whorf’s linguistic determinism theory
  - (or linguistic relativity theory)
  - Language shapes thinking

Evidence: bilingual advantage
Thinking in images (process simulation)
Animal thinking
  - * Concept formation
  - * Theory of mind—similar to 2 yr. old
  - * Language: honeybees, ape language

**COGNITION**
### Neurological evidence

**Brain anatomy:**
- Larger brain (thickening of cortex due to enhanced connections?)
- 17% more synapses (maybe better neural plasticity?)
- Einstein’s brain—thicker in parietal lobe (math/spatial intelligence?)

**Brain function:**
- Frontal lobe activity during IQ test questions
- Perceptual speed correlates positively
- Neurological speed (evoked brain response faster)
- More efficient glucose consumption
- Uses less, processes more efficiently?

**Genes:**
- Identical twins highly correlated
- Adopted children, little correlation
- Heritability

### Assessing intelligence

**Binet’s test (to identify special needs)**
- Terman (Stanford)
  - Supported eugenics (Social Darwinism)
  - American version (Stanford-Binet)
- MA/CA X 100 = IQ
- Wechsler Adult Intelligence Scale (WAIS)
- Wechsler Intelligence Scale for Children (WISC)
- Bias: Stereotype threat, gender bias

### Creativity

- Convergent vs. divergent thinking
- How to maximize:
  - Develop expertise
  - Keep a venturesome personality
  - Stay intrinsically motivated
  - Live in creative environment

### Theories of intelligence

- It’s conceptual, not a thing
  - (reification—assuming it’s a thing)
- Single intelligence theory
  - Spearman: “g” represents related clusters of skills (used factor analysis)
- Multiple intelligence theories
  - * Based on evidence from savants
  - Thurstone: primary mental abilities
    - 7 clusters
  - Gardner: 8 intelligences
    - Linguistic, logical-mathematical, musical, spatial, kinesthetic, in-trapersonal, interpersonal, naturalistic
  - Stenberg’s triarchic theory
    - Analytical, creative, practical
- Emotional intelligence (EQ)
  - Relates to success in family, career

### INTELLIGENCE

### Creating tests

- **Standardization**
  - Representative sample, compare scores
  - Chart on normal curve
    - 68-95-99.7 (standard deviation)
- **Flynn effect**
  - IQ scores improving over time
- **Principles of test creation**
  - Reliability: test needs to get same results each time it’s given
  - Test-retest reliability
  - Split-half reliability
- **Validity:** test needs to measure what it’s designed to measure
  - Content validity (material reflects what should be tested)
  - Face validity
  - Criterion-related validity (matches in dependent measure of what the test is designed to measure)
  - Concurrent validity
  - Predictive validity
  - May be affected by range of scores tested
- **Construct validity** (use a previous validated instrument and correlate to that test’s results)

### Extremes of intelligence:

- **Mental retardation:**
  - Mild (50-70 IQ), moderate (35-50 IQ), Severe (20-35 IQ)
  - Down syndrome (extra 21st chromosome)
- **Gifted (Terman’s study — “Termites”)**
  - Healthy, well-adjusted, successful
  - No tracking, special treatment in China/Japan
PSYCHOLOGICAL DISORDERS

Medical model

Foundation
- U—unjustifiable
- M—maladaptive
- A—atypical
- D—disturbing to self or others

Measurement
- DSM-IV-TR (classification of disorders)
  - Axis 1—clinical syndrome?
  - Axis 2—personality disorder or mental retardation?
  - Axis 3—general med. Condition?
  - Axis 4—psychosocial or environmental problems?
  - Axis 5—global assessment of functioning (0-100)

Diagnostic labeling
- Advantages:
  - Appropriate treatment
  - Stimulate research
  - Payment of insurance

Disadvantages:
- Rosenhan’s study—labeling leads to self-fulfilling prophecies? Cause interpretations of behavior?

Insanity—when?
- M’Naughten rule—is the defendant unable to distinguish right from wrong because of mental defect?
- 90% of those with disorders are not dangerous to others

Anxiety disorders (#7)

Panic disorder
- strikes suddenly
- panic attacks (seem like heart attacks)
- often linked to agoraphobia

Phobias—focused fear

Obsessive-compulsive disorder (OCD)
- Obsessions—thoughts
- Compulsions—behaviors

PTSD (post-traumatic stress disorder)

GAD (generalized anxiety disorder)
- Free-floating anxiety

Source:
- Behavioral interpretation
  - Classical conditioning & generalization
  - Negative reinforcement maintains the fear
- Observational learning?
- Biology (natural selection, genes, activity in anterior cingulated cortex, activity in amygdale, GABA)

Mood (affective) disorders (#6)

Depression (common cold of disorders)
- Major depressive disorder (more than 2 weeks of debilitating depression)
- Dysthymic disorder (more than 2 years feeling bad most days)

Bipolar disorder
- Mania (restlessness, risk-taking, craziness, fast talking) alternates with depression
  - May be fast cycling or slow cycling

Explanations:
- Genetic predispositions (linkage analysis, association studies)
- Brain chemistry (serotonin, norepinephrine, dopamine; decreased activity in left frontal lobe
- Social-cognitive
  - Self-defeating beliefs (learned helplessness)
  - Optimistic Explanatory Style
  - Stable, global, internal (depressed)
  - Temporary, specific, external (non-depressed)

Vicious cycle of depression:
- Stressful experience…leads to
- Negative explanatory style…leads to
- Depressed mood…leads to
- More stressful experiences…and the cycle begins again

Fight depression by: changing environment, reducing self-blame, making positive predictions about the future, exercise, become focused on helping others, laugh more

Dissociative disorders (#10)

Dissociative identity disorder
- multiple personality

Dissociative fugue
- person doesn’t remember past, wakes up in strange location

Dissociative amnesia
- person doesn’t remember past

No biological explanations
**Schizophrenia (#5)**

Considered the “cancer” of disorders 1% of population worldwide (suggests biological basis)
Involves a break with reality (psychosis)
**NOT multiple personality**

Common symptoms:
* Disorganized thinking - Delusions (false beliefs)
  Paranoia (persecution)
  Word salad (bizarre speech)
* Disturbed perceptions
  Hallucinations (auditory most often)
* Inappropriate actions/emotions
  Reactivity
  Flat affect
  Catatonia
- Subtypes of symptoms:
  Positive symptoms (exhibit odd behavior)
  Negative symptoms (normal behavior absent)
- Either chronic (process—develops slowly) or acute (reactive—develops quickly)

Patterns:
Paranoid schizophrenia
Disorganized schizophrenia
Catatonic schizophrenia
Undifferentiated schizophrenia
Residual schizophrenia

**Brain abnormalities**
- Dopamine overactivity
  - D4 receptors 6X normal
- Glutamate—may relate to negative symptoms
- Enlarged ventricles
- Shrunken thalamus

**Environmental factors**
- Low birth weight, famine, oxygen deprivation?
- Virus during pregnancy? Flu link during 2nd trimester

**Genetic factors**
- Much higher chance of shared schizophrenia with identical vs. fraternal twins

**Psychological factors/warning signs**
- Birth complications
- Mother with schizophrenia
- Separation from parents
- Disruptive or withdrawn behavior
- Poor muscle coordination
- Poor attention span
- Poor peer relationships/solo play
- Emotional unpredictability

**Typical onset**—teens or early 20s

---

**Personality disorders (#16)**

Cluster A (eccentric)
- Paranoid personality disorder
- Schizoid personality disorder—odd, withdrawn behavior
- Schizotypal personality disorder—with some schizophrenic-like symptoms

Cluster B (dramatic)
- Antisocial personality disorder—lack of remorse, empathy (mirror neurons); typical onset about 8 yrs.
- Borderline personality disorder—on the borderline of psychosis
- Histrionic personality disorder—dramatic personality
- Narcissistic personality disorder—extreme self-absorption

Cluster C (anxious)
- Avoidant personality disorder—stays away from others
- Dependent personality disorder
- Obsessive-compulsive personality disorder

---

**Somatoform disorders (#8)**

Somatization disorder—body problem caused by psychological problem (ex. ulcers)
Conversion disorder—psychological problem converted to non-biological physical problem (ex. paralysis in “Heidi”)
Hypochondriasis
Psychoanalysis

Based on Freudian ideas
Repressed ideas must be accessed
Insight is the goal
Methods
Free association
Resistance
Dream analysis
Transference
Duration
Years
Psychodynamic therapy—same foundation, less intense

Behavioristic

Classical conditioning applications:
- Counterconditioning—replace previous fear response with new relaxation response
  - Exposure therapy (Mary Cover Jones)
    Gradual exposure to feared object
  - Systematic desensitization (Wolpe)
    Anxiety hierarchy, then relaxation
  - Virtual reality exposure therapy
  - Implosion therapy
    Includes flooding
  - Aversive conditioning (substitute negative response for unwanted behavior)
Operant conditioning applications:
- punishment (bed-wetting buzzers)
- behavior modification
  * token economy

Effectiveness

People report that therapy is effective
* But regression toward the mean?
* Selective recall
* Eysenck’s research: 2/3 improved with or without therapy
Depression: cognitive, interpersonal, behavior
Anxiety: cognitive, exposure, behavioral
Bulimia: cognitive-behavioral therapy
Other unusual treatments:
  EMDR—For trauma victims
  Light exposure therapy—for SAD

Humanistic

Focus: boost self-actualization (Maslow)
Become more self-accepting
Method:
Client-centered therapy
  - active listening (no judgment)
  - Reflect feelings of client
  - non-directive
Therapist: genuineness, unconditional positive regard, empathy
Goal: promote personal growth, personal responsibility

Cognitive therapy

Aaron Beck (cognitive triad)
Albert Ellis (RET)
Stress inoculation training (change in thinking patterns to stress)
Cognitive-behavioral therapy

Biomedical therapy

1950’s—deinstitutionalization
Antipsychotic medications (D2 antagonists):
  Chlorpromazine (Thorazine) - pos. symptoms
  Clozapine (Clozaril) - negative symptoms
* Problem: tardive dyskinesia
Atypical antipsychotics (D2 & serotonin antagonists) - fewer side effects
Antianxiety meds: Xanax, Valium, Ativan (GABA agonists)
Antidepressants: also for OCD, anxiety
  SSRI’s—Prozac, Zoloft, Paxil, etc.
Mood stabilizers
  Lithium—bipolar
  Depakote—bipolar (originally for seizures)
Brain stimulation
  ECT (electroconvulsive therapy)
  rTMS (magnetic stimulation)
Surgery: Lobotomy (Moniz)
**SOCIAL PSYCHOLOGY**

**Attribution theory**
- Internal vs. external attributions
  * Fundamental attribution error
  * Actor-observer bias
  * Self-serving bias

**Group behavior**
- Social facilitation vs. social inhibition
  * related to Yerkes-Dodson Law
- Social loafing
- Deindividuation
  * loss of identity, others don’t know who you are
- Group polarization
  * movement to more extreme positions
- Groupthink (Janus)
  * influenced by desire for harmony
- Minority influence
  * self-confidence, determination key
- Prejudice (attitude) — leads to discrimination (behavior)
  * Social roots: social inequality, blame-the-victim, in-group vs. out-group leading to in-group bias
  * Emotional roots: Fear, anger (leads to scapegoating)
- Group influence
  * chameleon effect
  * mood linkage (mimicry)
- Normative social influence vs. informational social influence
- Obedience (Milgram’s study)

**Aggression and conflict**
- Biology: genetics, amygdala, decreased frontal lobe activity, testosterone levels
- Psychology
  * Frustration-aggression principle
  * Modeling (observational learning)
  * Social scripts (mental tapes on how to act)
  * Video games?
  * Catharsis hypothesis (builds more anger)
- Conflict
  * Social traps
    - pursue self-interest, everyone loses
  * Enemy perceptions
    - mirror-image perceptions

**Attraction and altruism**
- Passionate love (two-factor theory)
  vs. companionate love (key is equity, self-disclosure)
  * Physical attractiveness key
  * Similarity
  * Proximity (mere exposure effect)
- Altruism
  * Bystander affect
    * diffusion of responsibility
    * pluralistic ignorance
    * Explained by social exchange theory
      * Reciprocity norm
      * Social responsibility norm
- Peacemaking, GRIT
  *Superordinate goals