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

Humanism

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

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)

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.

The self

Hazel Markus—“possible selves”
Spotlight effect
Self-referencing effect
Self-esteem
Defensive vs. secure
Self-serving bias
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 \(\rightarrow\) STM \(\rightarrow\) 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)

- 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

**SOCIAL**

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

- Lorenz’s study of imprinting

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

- Baumpind’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

- Self concept
  - 18 mo.—rouge test

**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

**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
Spreads 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

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)

The endocrine system

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
HISTORY & RESEARCH

Psychological research

Perspectives

Introspection
- Wilhelm Wundt—1st lab, Germany
- Structuralism
- William James—1st text, Harvard
- 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

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

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
- Superstitition
- Experiment
  (see experimentation)

Limits of intuition
- Hindsight bias
- Overconfidence
- Confirmation bias

Scientific attitude
- Curiosity
- Skepticism
- Humility

Scientific method
- Theories
- Hypothesis
- Operational definitions
- Replication

Inferential statistics
- Do my results matter?
  - * Sample size influence
  - * Significant differences
    - p<.05 (alpha level)

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)

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

- Limits of intuition
  - Hindsight bias
  - Overconfidence
  - Confirmation bias

- Scientific attitude
  - Curiosity
  - Skepticism
  - Humility

- Scientific method
  - Theories
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- Methodology
  - Case study
  - Survey
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- Naturalistic observation
  - * Must avoid Hawthorne Effect

- Correlational studies
- Prediction
- NOT CAUSATION
- Illusory correlation
- Superstitition

- Experiment
  (see experimentation)
# 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

# 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

# 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
The basics

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

Perceptual organization

- Figure-ground relationship
- Gestalt principles
  - Proximity
  - Similarity
  - Continuity
  - Connectedness
  - Closure

PERCEPTION

Visual perception

- 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

Other principles

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

Critical periods

Perceptual adaptation

Perceptual set

Context effects

Human factors

ESP (extra-sensory perception)?

Parapsychology

Telepathy

Clairvoyance

Precognition

Psychokinesis

Way to test: Ganzfeld procedure

Perceptual organization

Figure-ground relationship

Gestalt principles

Proximity

Similarity

Continuity

Connectedness

Closure
**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)
  - Stage 4 (>50% delta waves)
    - Stage 3 & 4—slow wave sleep
- Order of stages
  1, 2, 3, 4, 3, 2, REM, 2, 3, 4, 3, 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”
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)

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

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)

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**

- 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
COGNITION

**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
**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, intrapersonal, interpersonal, naturalistic
  - Stenberg’s triarchic theory
    - analytical, creative, practical
- Emotional intelligence (EQ)
  - Relates to success in family, career

**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

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

**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

**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)
- Extreme 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
### 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

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**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
**DISORDERS (CONTINUED)**

### 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

### 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”)

### Explanations of schizophrenia

**Brain abnormalities**
- Dopamine overactivity
  - D4 receptors 6 X 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
**Behavioristic**

Classical conditioning applications:
- Counterconditioning—replace previous fear response with new relaxation response
  - Exposure therapy (Mary Cover Jones)
  - Systematic desensitization (Wolpe)
  - Virtual reality exposure therapy
  - Implosion therapy
    - Aversive conditioning (substitute neg. response for unwanted behavior)

Operant conditioning applications:
- punishment (bed-wetting buzzers)
  - behavior modification
    - * token economy

**Psychoanalysis**

Based on Freudian ideas
- Repressed ideas must be accessed
- Insight is the goal

Methods
- Free association
- Resistance
- Dream analysis
  - Latent content most important
- Transference
- Duration
- Years

Psychodynamic therapy—same foundation, less intense

**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

**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

**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

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)
* Cognitive roots: Categorization, availability heuristic, just-world phenomenon
* Jane Eliot study—children and stereotyping - self-fulfilling prophecies

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

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

Attitude change

Cognitive/affective components of attitudes (attitude vs. opinion)
Action affecting attitudes
* Foot-in-the-door
* Door-in-the-face

Persuasion
* Central route to persuasion
* Peripheral route to persuasion
Role playing (Zimbardo prison study)
Cognitive dissonance (Festinger)

Group influence

Conformity (Asch study)
* chameleon effect
* mood linkage (mimicry)
Normative social influence vs. Informational social influence
Obedience (Milgram’s study)

Attribution theory

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