PSYC 1010
Exam-AID
Review Package 4

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Preface

This document was created by the York University chapter of Students Offering Support (York SOS) to accompany our PSYC 1010 Exam-AID session. It is intended for students enrolled in any section of Dr. Jubis‟ 2010/2011 PSYC 1010 course who are looking for an additional resource to assist their studies in preparation for the exam.

References

Weiten, W., & McCann, D. (2010). *Psychology: Themes and variations* (2nd Canadian ed.). Toronto, ON: Nelson.

Contents

What is Students Offering Support?

Students Offering Support is a national network of student volunteers working together to **raise** funds to **raise** the quality of education and life for those in developing nations through **raising** marks of our fellow University students.

This is accomplished through our Exam-AID initiative where student volunteers run group review sessions prior to a midterm or final exam for a $20 donation.

All of the money raised through SOS Exam-AIDs is funneled directly into sustainable educational projects in developing nations. Not only does SOS fund these projects, but SOS volunteers help build the projects on annual volunteer trips coordinated by each University chapter.

Tips for General Midterm Success

Use mnemonics to remember concepts better. An example of a mnemonic would be acronyms. For instance, knowing the word “ocean” can help you remember the Big Five personality traits: **o**penness to experience, **c**onscientiousness, **e**xtraversion, **a**greeableness and **n**euroticism.

Do practice multiple choice questions. Doing these practice questions can assess your understanding of what you‟ve learned and can help you identify areas of weakness. Practice multiple choice questions are found in textbooks, on textbook companion websites, and/or provided by your professor. *Psychology: Themes and Variations* has practice questions in it and on its online companion website (http://www.themesandvariations2ce.nelson.com/student/chapter/).

Read a multiple choice question and try to answer it BEFORE looking at the possible answers. Having an answer in mind before looking at possible answers can reduce the chances of being fooled by wrong answers.

Use logic and process of elimination on multiple choice questions. For example, if you know that answer A is wrong, then logically an answer “A and B are correct” in the same question must also be incorrect. When you don‟t know the answer, eliminating wrong answers (as opposed to just random guessing) can increase your chances of getting the question right.

Practice writing answers to short answer questions. If you know ahead of time what the questions will be on the short answer section, make a list of essential points you want to include in each answer and practice writing the answer on paper. If you don‟t know what questions will be on the short answer section, you could try scanning the material to identify concepts that have enough content to be a possible short answer question. Again, you can make a list of essential points you want to include in each answer and practice writing the answer on paper. Even if the question you thought of doesn‟t show up on the short answer section, doing this can help solidify what you learned.

Don’t spend too much time on a difficult question. It is better to move onto easier questions to ensure getting those marks than to get hung up on a difficult question, especially when time is limited.

Get adequate sleep the night before your test. Sleeping at night helps consolidate what you learned during the day into memory so that it is better remembered in future. Not only does staying up late the night before a test destroy your concentration during the test the next day, but your brain has not effectively learned the material.

Chapter 14: Psychological Disorders

Abnormal Behaviour: Myths, Realities and Controversies

The Medical Model Applied to Abnormal Behaviour

- old way of thinking: superstition
  - abnormal people possessed by demons, affiliated with the demon or being punished by God
  - treatment: chants, rituals, exorcisms, etc.
- **medical model**: useful to conceptualize abnormal behaviour as a disease
  - dominant way of thinking since 18th and 19th century
- early asylum conditions were deplorable, but gradually became more humane
- Thomas Szasz is opposed to medical model:
  - illness only affects body and not the mind
  - abnormal behaviour is a deviation from social norms and not an illness
- regardless of debate, medical model has been effective in treating and studying abnormality
- **diagnosis**: distinguishing one illness from another
- **etiology**: apparent causation and developmental history of an illness
- **prognosis**: forecast about the probable course of an illness

Criteria of Abnormal Behaviour

- **deviance**: behaviour deviates from social norms (varies culture to culture)
  - ex. *transvestic festishism*: man achieves sexual arousal by dressing in women's clothing
- **maladaptive behaviour**: everyday adaptive behaviour is impaired
  - usually something that interferes with social or occupational functioning, like substance-use disorders
- **personal distress**: subjective distress
  - ex. depressed people, who may not emit deviance or maladaptive behaviour
- people often viewed as disordered if they are *extreme* in 1 of the 3 above criterion
- therefore: diagnosis hinges on *value judgments*
- abnormal-normal exists on a continuum

Stereotypes of Psychological Disorders

- psychological disorders are incurable
  - truth: vast majority of mentally ill improve and lead normal, productive lives (even those with more severe psychological disorders)
- people with psychological disorders are often violent and dangerous
  - truth: most predictive factor of violence is past violence, no consistent evidence that psychological disorder is

- people with psychological disorders behave in bizarre ways and are very different from normal people
    - truth: only a small minority act bizarre and seem different
    - Rosenhan study: normal people faking symptoms were able to fool trained professionals

Psychodiagnosis

- 1952: first edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM) published
- 1968: second edition (DSM-II) published with improvements but classification scheme still vague and informal like DSM-I
- 1980: third edition (DSM-III) published with major improvement because diagnostic criteria more explicit and concrete
- 1994: most current version (DSM-IV) published
- DSM-III introduced multiaxial system of classification (5 dimensions)
    - **Axis I**: clinical syndromes
    - **Axis II**: personality disorders and mental retardation
    - **Axis III**: general medical conditions
    - **Axis IV**: psychosocial and environmental problems (stress)
    - **Axis V**: global assessment of functioning (GAF; adaptive functioning in social and occupational behaviour)
- 2011: intended year of publication for DSM-V

The Prevalence of Psychological Disorders

- **epidemiology**: study of distribution of mental or physical disorders in population
    - not to be confused with **etiology**: study of causation
- **prevalence**: percentage of a population that exhibits a disorder during a specified time period
    - *lifetime prevalence*: percentage of people who endure a specific disorder at any time in their lives
- studies estimating lifetime prevalence of mental illness:
    - prior to DSM-III: 1/5
    - during DSM-III: 1/3
    - more recently: 44% and 51%
- Statistics Canada report:
    - gender variation across categories of disorder
    - 68% with a disorder don't seek help
    - costs for individuals and family, as well as for the health system are enormous

Anxiety Disorders

Anxiety Disorders: class of disorders marked by feelings of excessive apprehension and anxiety

Generalized Anxiety Disorder: chronic, high level of anxiety that is not tied to any specific threat

- the anxiety sometimes called *free-floating anxiety* because it's nonspecific
- constant worry over yesterday's mistakes, tomorrow's problems, minor matters
- hope that worrying will ward off negative events
- dread decisions and brood over them endlessly

Physical symptoms: trembling, muscle tension, diarrhea, dizziness, faintness, sweating, heart palpitations
Onset: gradual
Prevalence: higher in females

Phobic Disorder: persistent and irrational fear of an object or situation that presents no realistic danger

- only diagnosed when the fear interferes with everyday behaviour
- 1%-5% of Canadians have a phobia of driving
- can form phobia of virtually anything
- most common manifestations:
    - acrophobia: fear of heights
    - claustrophobia: fear of enclosed places
    - brontophobia: fear of storms
    - hydrophobia: fear of water
- normally recognize phobia is irrational, but can't help but be afraid
- even imagining phobic image can elicit fear

Panic Disorder: recurrent attacks of overwhelming anxiety that usually occur suddenly and unexpectedly

- people become apprehensive of when next panic will occur
- fear of exhibiting panic in public can result in **agoraphobia**: fear of going out to public
    - often confine themselves to the home
- 34% of students encounter nonclinical panic (not as severe as a panic attack)

Onset: typically begins in late adolescence or early adulthood
Prevalence: 2/3 are female

Obsessive-Compulsive Disorder (OCD): persistent, uncontrollable intrusions of unwanted thoughts (obsessions) and urges to engage in senseless rituals (compulsions)

- TV host Howie Mandel is known for his obsession with germs
    - always carries rubber gloves
- obsessions can center on inflicting harm on others, personal failures, suicide or sexual acts
- compulsions usually involve stereotyped rituals that temporarily relieve anxiety

- certain obsessions tend to be associated specific compulsions
    - ex. obsession of contamination and cleaning compulsion
- recent heterogeneity found (more variations): 4 underlying factors
    - obsessions and checking
    - symmetry and order
    - cleanliness and washing
    - hoarding

Onset: most cases before age 35
Prevalence: 2.5% lifetime

Post-Traumatic Stress Disorder (PTSD)

- often elicited by a variety of traumatic events, ex. rape or assault, car accident, natural disaster, witnessing death, etc.
- common symptoms: re-experience of trauma as flashbacks or nightmares, emotional numbing, alienation, problems in social relationships, increases sense of vulnerability, elevated arousal, anxiety anger and guilt
- higher risk from greater intensity of exposure to trauma or grotesque aftermath, especially the intensity of *one's reaction* at the time of trauma

Onset: can surface months or years later after exposure
Prevalence: 7%-8% lifetime, higher in females (10%) than males (5%)
Prognosis: recovery is gradual, but for many symptoms don't fully disappear

Etiology of Anxiety Disorders

- biological factors:
    - *twin* and *family studies* show a higher **concordance rate** (% of twin pairs or other pairs of relatives who exhibit same disorder) for anxiety disorders
    - **anxiety sensitivity**: person is more sensitive to internal physiological symptoms of anxiety and tend to overreact with more fear than others
    - **disturbance in GABA synapses**, since excessive anxiety relieved by drugs that promote GABA synapse activity
    - *abnormality in serotonin circuits* implicated in panic disorder and OCD
- conditioning and learning:
    - many anxiety responses acquired by **classical conditioning** and maintained by **operant conditioning**
        - ex. phobia will produce avoidance of phobic stimulus which will reduce anxiety (negative reinforcement)
    - **preparedness**: people are biologically prepared by evolutionary history to acquire some fears much more easily than others (Martin Seligman)
        - acquire ancient sources of threat (ex. snakes) more readily than modern sources of threat (ex. electrical outlets)

        - *evolved module for fear learning*: stimuli that threatens survival in evolutionary history activate fear, which is relatively resistant to efforts to suppress
    - criticism:
        - many people don't remember a traumatic conditioning experience that led to phobia
    - **observational learning** can lead to conditioned fears
- cognitive factors:
    - higher risk for those who tend to:
        - misinterpret harmless situations as threatening
        - focus excessive attention on perceived threats
        - selectively recall information that seems threatening
    - one experiment showed anxious subjects made more threatening attributions to ambiguous written sentences
- stress:
    - studies support that anxiety disorders are stress-related
        - ex. panic disorder associated with dramatic increase in stress 1 month prior to onset of disorder
    - high stress often precipitates onset of anxiety disorders

Somatoform Disorders

Somatoform Disorders: physical ailments that can't be fully explained by organic conditions and are largely due to psychological factors

- not to be confused with:
    - *psychosomatic diseases*: genuine physical ailment caused in part by psychological factors
    - *malingering*: deliberate faking of illness

Somatization Disorder: marked by history of diverse physical complaints that appear to be psychological in origin

- people report endless succession of minor physical ailments that seem to wax and wane in response to the stress in their lives
- usually have long and complicated history of medical treatment by many doctors
- resistant to suggestion that symptoms might be the result of psychological distress

Comorbidity: depression and anxiety disorders
Prevalence: higher in females

Conversion Disorder: significant loss of physical function (with no apparent organic basis), usually in a single organ system

- common symptoms: partial or complete loss of vision or hearing, partial paralysis, severe laryngitis or mutism, loss of feeling or function in limbs

Onset: acute (triggered by stress)

Hypochondriasis: excessive preoccupation with health concerns and incessant worry about developing physical illnesses
- constantly monitor physical condition, looking for signs of illness and *overinterpreting* every conceivable sign of illness
- often skeptical of doctors who say there's nothing wrong

Comorbidity: anxiety and depressive disorders

Etiology of Somatoform Disorders
- genetic factors have small contribution
- personality factors:
  - people with certain personality traits at higher risk
  - especially those who are **histrionic**: self-centered, suggestible, excitable, highly emotional, overly dramatic
  - also those marked by *neuroticism*
- cognitive factors:
  - tendency to focus excessive attention on internal physiological processes and amplify normal bodily sensations
  - tendency to draw catastrophic conclusions about minor bodily complaints
  - tendency to apply faulty standards of good health, equating health with the absence of symptoms and discomfort (unrealistic)
- people are reinforced by indirect benefits of **sick role**:
  - avoid having to confront life's challenges and responsibilities
  - provides convenient excuse when people fail or worry about failing
  - attention from others (activates social supports)

Dissociative Disorders

Dissociative Disorders: class of disorders in which people lose contact with portions of their consciousness or memory, resulting in disruptions in their sense of identity

Dissociative Amnesia: sudden loss of memory or important personal information that is too extensive to be due to normal forgetting
- may occur for a single traumatic event or for an extended period surrounding the event

Dissociative Fugue: people lose memory of their entire lives, along with their sense of personal identity
- forget factual information about self but not skills

Dissociative Identity Disorder (DID): coexistence in one person of two or more largely complete, and usually very different, personalities
- formerly **multiple personality disorder**

- often confused with *schizophrenia*
- various personalities of a person often unaware of each other
- transitions between identities often occur suddenly
- most have a history of anxiety or mood or personality disorders
- number of cases exploded by 1990:
    - some think it was *underdiagnosed* prior
    - some think it has been *overdiagnosed* by clinicians who may even encourage and contribute to its emergence

Etiology of Dissociative Disorders

- psychogenic amnesia and fugue usually attributed to excessive stress
    - but why such a small minority
    - perhaps due to personality trait of fantasy proneness and tendency to become intensely absorbed in personal experiences
- DID is a mystery
    - DID is role-playing, promoted by a small minority of therapists and is a creation of North American culture (Spanos)
    - others propose DID is the result of severe emotional trauma during childhood
        - some DID patients do report abuse, rejection, etc., but childhood trauma is a precursor for many disorders

Mood Disorders

Mood Disorders: class of disorders marked by emotional disturbances of varied kinds that may spill over to disrupt physical, perceptual, social and thought processes

- marked by disturbed emotion
- **unipolar disorder**: person experiences one extreme of mood continuum (mania or depression)
- **bipolar disorder**: person experiences both extremes of the mood continuum (mania and depression)

Major Depressive Disorder: persistent feelings of sadness and despair and a loss of interest in previous sources of pleasure

- common symptoms: hopelessness, socially-withdrawn, negative self-image, self-blame, trouble sleeping, decreased sex drive and appetite, sluggish demeanour, irritability
- 75%-95% suffer from more than 1 depressive episode
- median duration of depressive episodes: 5 months
- **dysthymic disorder**: chronic depression that is insufficient in severity to justify diagnosis of a major depressive episode

Comorbidity: anxiety disorders and substance-use disorders
Onset: most before age 40
Prevalence: 10% lifetime

- increasing due to higher prevalence in younger cohorts (especially those since WWII)
- twice as high in women than men (same during childhood)
    - women tend to be sensitive to **discrepancies** involving their beliefs about themselves and the ideals they perceive others hold for them, men do not
    - women more likely to be victimized by sexual abuse, etc. = greater stress and adversity than men
    - women have greater tendency to **ruminate** about setbacks and problems

Bipolar Disorder: experience of one or more manic episodes as well as periods of depression

- formerly known as *manic-depressive disorder*
- **manic phase** marked by: elation, euphoria, racing thoughts, flight of ideas, desire for action, impulsivity (can spend money frantically), delusions of grandeur, tirelessness, increased sex drive
    - many report productivity and creativity
- **cyclothymic disorder**: chronic but milder symptoms of bipolar disturbance
- **rapid-cycling pattern**: going through 4+ manic or depressive episodes within a year

Onset: 25 median age of onset
Prevalence: 1%-2.5% in population, 1% lifetime, equal between men and women

Diversity in Mood Disorders

- specifiers (which provide additional information) may accompany mood disorder diagnosis
    - **seasonal affective disorder (SAD)**: type of depression that follows a seasonal pattern
        - most common is winter depression
        - 11% of depression cases, 3% lifetime prevalence
        - cause: related to melatonin production and circadian rhythms
        - treatment: **phototherapy** whereby patients are exposed systematically to light
    - **postpartum depression**: type of depression that sometimes occurs after childbirth
        - 10%-20% of women who give birth
        - higher prevalence in immigrant women, which may reflect the additional stresses of their adjustment to Canada
        - risk factors: previous depressive episodes, adjustment problems, stress, impairments in GABA receptors

Mood Disorders and Suicide

- suicide is the third leading cause of death in people 15-34

- statistics are complicated when suicides are disguised as accidents
- suicide attempts may outnumber completed suicides 20 to 1
- women attempt 3 times more than men
- men complete suicide 4 times more than women
- suicide is the highest in 75+ age group
- 90% of those who complete suicide suffer from some type of psychological disorder
    - 60% have mood disorder

Etiology of Mood Disorders

- genetic vulnerability:
    - concordance rates of 65% for identical twins and 14% for fraternal twins = suggest genetic factors involved in the form as a **predisposition**
    - stronger in bipolar than for unipolar disorders
    - inconsistent evidence found for implicated genes
- biological and neurochemical factors:
    - abnormal levels of norepinephrine and serotonin associated with depression
    - **drug therapy** which affect neurotransmitters found to alleviate some mood disturbances = evidence for neurochemical changes causing mood disturbances
    - associated with **reduces hippocampal volume** (8%-10% smaller)
        - **stress suppresses neurogenesis** in the hippocampal formation which may explain reduced size
    - drugs that increase serotonergic activity may promote neurogenesis
- dispositional factors:
    - **perfectionism** and setting excessively high standards associated with depression
    - Flett and Hewitt devised multidimensional scale of perfectionism:
        - *self-oriented perfectionism*: one's standards for self
        - *other-oriented perfectionism*: one's standards for others
        - *socially prescribed perfectionism*: perceived standards for self by others
    - Beck suggests 2 personality styles contribute to depression:
        - *sociotropic individual*: invested in interpersonal relations, overconcerned with avoiding interpersonal conflict and pleasing others
        - *autonomous individual*: oriented toward their own independence and achievement
    - Blatt distinguishes the *introjective personality orientation* (excessive self-criticism) and the *anaclitic orientation* (overdependence on others)
    - Zuroff and Mongrain verified that dispositional factors operate as vulnerabilities in response to certain stressors

- cognitive factors:
    - Beck's **negative cognitive triad**: tendency to have negative views of themselves, their world and their future
        - negative schemas draws attention to negative information
    - Seligman implicated:
        - **learned helplessness**: passive "giving up" behaviour produced by exposure to unavoidable aversive events
        - **pessimistic explanatory style**: tendency to attribute setbacks to personal flaws rather than situational factors and the tendency to draw global, far-reaching conclusions about their personal inadequacies
    - *hopelessness theory* encompasses pessimistic explanatory style, high stress, low self-esteem which contribute hopelessness
        - emphasizes *cognitive reactions* to events
    - negative thinking does contribute to depression (see Featured Study)
- interpersonal roots:
    - depression associated with poor social skills
    - depressed people tend to invite rejection from those around them and have fewer social supports
    - depressed people may gravitate to partners who reinforce their negative views about themselves
- precipitating stress:
    - moderate link between precipitating stress and depression
    - depends on individual's *vulnerability* to stress

Schizophrenic Disorders

Schizophrenic Disorders: class of disorders marked by delusions, hallucinations, disorganized speech and deterioration of adaptive behaviour

- not to be confused with DID or multiple-personality disorder
- marked by disturbed thought
- financial impact of schizophrenia exceeds costs of all types of cancers combined

Prevalence: 1% of population

General Symptoms

- **delusions**: false beliefs that are maintained even though they clearly are out of touch with reality
    - examples of delusion:
        - one 's private thoughts are broadcasted to other people
        - thoughts are injected into one's mind against will
    - *delusion of grandeur*: one is famous or important
    - thinking is chaotic, disconnected, flight of ideas
- **deterioration of adaptive behaviour**: trouble with everyday functioning

- **hallucinations**: sensory perception that occurs in the absence of a real, external stimulus or are gross distortions of perceptual input
    - ex. auditory and visual hallucinations
- **disturbed emotions**:
    - *blunted or flat affect*: little emotional responsiveness
    - *inappropriate emotion*: inappropriate emotional response to a situation
        - ex. cry during a comedy

Subtypes

- **paranoid schizophrenia**: dominated by delusions of persecution and grandeur
    - often think people are "out to get them"
        - compensate with thoughts of grandeur
- **catatonic schizophrenia**: marked by striking motor disturbances, ranging from muscular rigidity to random motor activity
    - some engage in **catatonic stupor**: extreme form of withdrawal where one remains motionless and seem oblivious to the environment around them for long periods of time
    - some engage in **catatonic excitement**: go hyperactive and incoherent
    - can oscillate between the stupor and excitement
    - decreasing in prevalence
- **disorganized schizophrenia**: particularly severe deterioration of adaptive behaviour is seen
    - emotional indifference, frequent incoherence and virtually complete social withdrawal
    - aimless babbling and giggling are common
    - delusions often center on bodily functions
- **undifferentiated schizophrenia**: marked by idiosyncratic mixtures of schizophrenic symptoms
    - fairly common
- above 4 subtypes not useful, which prompted new scheme:
    - **negative symptoms**: behavioural deficits, such as flattened emotions, social withdrawal, apathy, impaired attention and poverty of speech
    - **positive symptoms**: behavioural excesses or peculiarities, such as hallucinations, delusions, bizarre behaviour and wild flights of ideas
        - associated with better adjustment prior to onset and responsiveness to treatment
    - has not replaced subtypes because of problems:
        - most patients have both negative and positive symptoms
        - possible third category: *disorganization*

Course and Outcome

- most have a history of peculiar behaviour, along with cognitive and social deficits
- usually gradual and insidious
- 3 typical courses of treatment:
    - full recovery (usually for those with milder symptoms)
        - 20% of cases (may reflect poor mental healthcare options)
    - partial recovery with relapses throughout life
    - chronic illness with extensive hospitalization

Etiology of Schizophrenia

- genetic vulnerability:
    - average of 48% concordance rates for identical twins compared to 17% for fraternal twins
    - 46% of child developing if parents are schizophrenic
    - inherited polygenic vulnerability, but no genes implicated yet
- neurochemical factors:
    - **dopamine hypothesis**: excess dopamine activity
        - evidence: drugs that treat schizophrenia decrease dopamine activity
        - inconsistencies still exist
    - **marijuana** use for those with genetic vulnerability may lead to schizophrenia
        - THC may amplify dopamine activity
- structural abnormalities:
    - **enlarged brain ventricles** associated with schizophrenia
        - could be a consequence of schizophrenia
    - also associated with reduced metabolic activity in prefrontal cortex (may contribute to positive symptoms) and increased metabolic activity in an area in the temporal lobe (may contribute to negative symptoms)
- **neurodevelopmental hypothesis**: schizophrenia is caused in part by various disruptions in the normal maturational processes of the brain before or at birth
    - insults to brain (ex. viral infections or prenatal malnutrition) cause subtle neurological damage which increases vulnerability
    - correlations between schizophrenia and prenatal exposure to influenza or famine, and minor physical anomalies
    - possibly increases risk for *mood disorders* too
- **expressed emotion (EE)**: degree to which a relative of a schizophrenic patient displays highly critical or emotionally overinvolved (overprotective) attitudes toward the patient
    - family's expressed emotion is a good predictor of schizophrenia and of high relapse rate (family is a source of stress and not support)
- precipitating stress:

- stress activates vulnerability and triggers relapse

Personality Disorders

Personality Disorders: class of disorders marked by extreme, inflexible personality traits that cause subjective distress or impaired social and occupational functioning

- essentially extreme manifestations of normal personality traits
- usually emerge during late childhood or adolescence and usually continue through adulthood
- 10 listed in DSM-IV and organized into 3 clusters:
  - **anxious/fearful**: maladaptive efforts to control anxiety and fear about social rejection
    - **avoidance personality disorder**: high sensitivity to rejection leads to social withdrawal
    - **dependent personality disorder**: completely reliant on another person and subordinating own needs to other's needs
    - **obsessive-compulsive personality disorder**: preoccupation with organization, schedules, lists, trivial details
      - extremely conventional, serious and formal
      - unable to express warm emotions
  - **odd/eccentric**: distrustful, socially aloof and unable to connect to others emotionally
    - **schizoid personality disorder**: defective in capacity for forming social relationships
    - **schizotypal personality disorder**: deficits and oddities in thinking, perception and communication (resembles schizophrenia)
    - **paranoid personality disorder**: pervasive and unwarranted suspiciousness and mistrust of people
  - **dramatic/impulsive**:
    - **histrionic personality disorder**: overly dramatic, egocentric
    - **narcissistic personality disorder**: grandiose self-importance
    - **borderline personality disorder**: unstable self-image, mood and interpersonal relationships
    - **antisocial personality disorder**: marked by impulsive, callous, manipulative, aggressive and irresponsible behaviour that reflects a failure to accept social norms
      - chronically violate rights of others
      - often use social charm to cultivate others' liking or loyalty for purposes of exploitation
      - more frequent in males than females

- many become involved in illegal activities
- many stay within the law though
- Hare uses *psychopathy*, used interchangeably
    - developed *Psychopathy Checklist–Revised* (PCL-R)
- rarely demonstrate genuine affection for others, good at faking it though
- pursue immediate gratification and are often unstable
- etiology:
    - genetic predisposition, perhaps from under arousal from lacking inhibitions or perhaps overarousal
    - poor socialization: tend to come from families where discipline was erratic or ineffective, and homes with abuse and neglect

Diagnostic Problems

- too much overlap with Axis I disorders and with each other = poor reliability
- many advocate for **dimensional approach**: personality disorders are described on continuous personality dimensions
    - as opposed to the current **categorical approach**: personality disorders are discontinuous diagnostic categories

Psychological Disorders and the Law

Insanity

- don't use "not guilty by reason of insanity" (**NGRI**) in Canadian system anymore, it's "not criminally responsible on account of mental disorder" (**NCRMD**)
    - implies that crimes are intentional and that those with mental disorders can commit crime without knowledge of its ramifications
    - defendant may be:
        - absolutely discharged
        - conditionally discharged
        - ordered to a psychiatric facility
- most people with mental illness would not qualify, it is usually those with delusional behaviour that do qualify
- **M'Naghten rule**: insanity exists when a mental disorder makes a person unable to distinguish right from wrong
- fitness, insanity and automatism relevant to *actus reus* (wrongful deed) and *mens rea* (criminal intent)
- mental health professionals important when defendants are *unfit to stand trial*

- issue of **automatism**: one is not accountable if one had no control over behaviour
    - ex. killing someone while sleepwalking
    - defendant is not guilty and released without conditions

Culture and Psychology

Introduction

- **relativistic view**: criteria of mental illness vary greatly across cultures
    - therefore: DSM-IV reflects a Western, white, urban, upper- and middle-class orientation
- **pancultural view**: criteria of mental illness are much the same around the world and that basic standards of normality and abnormality are universal
- **both views are valid**

Are Equivalent Disorders Found around the World?

- most principle categories of serious psychopathology identified in all cultures
    - less severe psychopathologies seen as peculiarities in other cultures
- have found **culture-bound disorders**: abnormal syndromes found only in a few cultural groups
    - *koro*: obsessive fear that one's penis will withdraw into one's abdomen found only among Chinese males in Malaya and other regions of southern Asia
    - *Windigo*: intense craving for human flesh and fear that one will turn into a cannibal seen only in Algonquin cultures
    - *pibloktoq*: Arctic hysteria associated with Inuit
    - *anorexia nervosa* seen only in affluent Western cultures

Are Symptom Patterns Culturally Invariant?

- the stronger the biological component, the more a disorder tends to be displayed in similar ways across cultures
- however variation can still be found despite strong biological component
    - ex. content of delusions in schizophrenia tied to cultural heritage
    - most variable for depression:
        - Western cultures emphasize profound feelings of guilt and self-deprecation
        - non-Western cultures emphasize somatic symptoms of depression (possibly more acceptable in their culture)

Featured Study: Does Negative Thinking Cause Depression?

Results & Discussion

- 17% of students high in negative thinking (in upper quartile range) later developed depression, whereas 1% of students low in negative thinking (in lower quartile range) later developed depression
- conclusion: negative thinking makes people more vulnerable to depression
- study strength: **prospective** which can provide insight on causation
    - as opposed to retrospective (correlational)

Personal Application: Understanding Eating Disorders

Eating Disorders: severe disturbances in eating behaviour characterized by preoccupation with weight and unhealthy efforts to control weight

- eating disorders are relatively recent

Anorexia Nervosa: intense fear of gaining weight, disturbed body image, refusal to maintain normal weight and dangerous measures to lose weight

- **restricting type**: reduction in food intake (starving)
- **binge-eating/purging type**: lose weight by vomiting after meals, misusing laxatives and diuretics or by engaging in excessive exercise
- morbid fear of obesity means they are never satisfied with their weight
    - only satisfaction comes from losing weight
- don't seek help because they don't acknowledge they have a problem
- leads to *amenorrhea* (loss of menstrual cycles in women), low blood pressure, gastrointestinal problems, *osteoporosis* (loss of bone density), cardiac problems
- leads to death in 5%-10% of patients

Bulimia Nervosa: habitually engaging in out-of-control overeating followed by unhealthy compensatory efforts, such as self-induced vomiting, fasting, abuse of laxatives and excessive exercise

- typically retain a normal body weight because vomiting prevents absorption of only half of consumed food and laxatives and diuretics have negligible impact on caloric intake
- common symptoms: cardiac arrhythmias, dental problems, metabolic deficiencies, gastrointestinal problems
- often coexist with depression, anxiety disorders and substance abuse
- differences from anorexia nervosa:
    - bulimia nervosa less life-threatening
    - bulimia nervosa patients more likely to recognize they have a problem and cooperate with treatment

Binge-Eating Disorder: distress-inducing eating binges that are not accompanied by the purging, fasting and excessive exercise seen in bulimia

- potential new disorder in DSM-V
- though more mild than bulimia and anorexia, probably more common

History, Prevalence and Course

- product of modern, affluent Western culture because food is plentiful and desirability to be thin is widely endorsed
    - starting to appear in other cultures which have been influenced by Western culture
- 90%-95% are female
    - probably due to greater pressure on women to be thin
- most tend to be *young* people
- anorexia:
    - onset: 14-18
    - prevalence: 1%
    - 40%-50% fully recover with treatment, while 20%-25% does not benefit at all
- bulimia:
    - onset: 15-21
    - 2%-3% prevalence
    - 70% recover with treatment

Etiology of Eating Disorders

- genetic vulnerability:
    - evidence from twin and family studies, not as strong compared to other disorders
- personality factors:
    - anorexia patients tend to be obsessive, rigid, emotionally restrained, perfectionistic
    - bulimia patients tend to be impulsive, overly sensitive and low in self-esteem
- cultural values:
    - women socialized that attractive women are thin
- role of family:
    - overinvolved parents leads to children seeking independence by exerting extreme control over their body (prompts pathological eating)
    - mothers may add additional pressure to be thin
- cognitive factors:
    - rigid, all-or-none thinking, etc.

Critical Thinking Application: Working with Probabilities in Thinking about Mental Illness

- *medical student's disease*: tendency to see yourself and friends in descriptions of pathology
- **representativeness heuristic**: estimated probability of an event is based on how similar the event is to the typical prototype (best example) of that event
    - ex. best example of a mentally ill person may be a crazy homeless guy, but 44% of people develop at least one DSM disorder in their life (meaning "normal" people develop mental illness too)
- **cumulative probability**: probability of each disorder is higher than any disorder by itself
- 44% prevalence is a *lifetime prevalence rate* (how many over a lifetime), not a *point prevalence rate* (how many at a particular time)
- **conjunctive probabilities**: probability of having more than one disorder is lower than the probability of having one disorder
    - **conjunctive fallacy**: occurs when people estimate the odds of 2 uncertain events happening together are greater than the odds of either event happening alone
- **availability heuristic**: estimated probability of an event is based on the ease with which relevant instances come to mind
- **hindsight bias**: tendency to overestimate the degree to which a past event was predictable after knowing the result

Chapter 15: Treatment of Psychological Disorders

Introduction

- *psychotherapy* refers to interventions for mental and psychological problems
    - encompasses a range of treatment contexts
- Ewan Cameron conducted CIA-funded brainwashing research
- LSD had initial optimism in treatment, but later programs were terminated

The Elements of the Treatment Process

Treatment

- 400+ treatments estimated
    - **insight therapies**: involves all talk therapy
    - **behaviour therapies**: based on behaviour principles
    - **biomedical therapies**: interventions aimed at biological functioning

Clients

- 90% of people are as concerned about mental health as physical health
- host of problems: most common are excessive anxiety or depression
- people tend to delay treatment for psychological problems
- stigma (seeking treatment is personal weakness) prevents people from seeking help

Therapists

- **psychologists**:
    - **counselling psychologists**: deal with everyday problems and adjustment
    - **clinical psychologists**: deal with mental disorders
    - require Ph.D., Psy.D. or Ed.D.
    - use either insight or behaviour therapy
    - may conduct psychological testing and research
- **psychiatrists**: physicians who specialize in diagnosis and treatment of psychological disorders
    - some also treat everyday behavioural problems
    - usually referred to by family physician
    - require an M.D.
    - primarily use drug therapy
- other mental health professionals:
    - clinical social workers tend to work with patients and families to ease the patient's integration back to the community
    - psychiatric nurses play a role in hospital inpatient treatment
    - counsellors provide therapeutic services
        - generally work in schools, colleges, human service agencies

Insight Therapies

Insight Therapies: involve verbal interactions intended to enhance clients' self-knowledge and thus promote healthful changes in personality and behaviour

Psychoanalysis: emphasis on recovery of unconscious conflicts, motives and defences through techniques such as free association and transference

- Freud usually treated anxiety-dominant disturbances which he called *neuroses*
    - caused by unconscious conflicts left over from early childhood
    - people use defence mechanisms to avoid confronting intrapsychic conflict of id, ego and superego
- **free association**: clients spontaneously express their thoughts and feelings exactly as they occur with as little censorship as possible
- **dream analysis**: therapist interprets the symbolic meaning of the client's dreams
- **interpretation**: therapist's attempts to explain the inner significance of the client's thoughts, feelings, memories and behaviours

- **resistance**: largely unconsciously defensive manoeuvres intended to hinder the progress of therapy
- **transference**: clients unconsciously start relating to their therapist as though the therapist in ways that mimic critical relationships in their lives
    - therapists encourage transference because re-enactment brings unconscious conflict to the surface so that the therapist can work with it
- once unconscious conflicts are found and resolved (thus gaining insight), neurotic defences are released
- modern **psychodynamic therapies**: descendants of psychoanalysis
    - classical psychoanalysis not widely practiced anymore
    - interpretation, resistance and transference continue to play key roles

Client-Centered Therapy: emphasis on providing supportive emotional climate for clients, who play a key role in determining the pace and direction of their therapy

- created by Carl Rogers, a.k.a. *person-centered therapy*
- anxiety is caused by **incongruence**: discrepancy between person's self-concept and reality
    - ex. believe one is hard-working but receive negative feedback from peers
    - this causes person to rely on defence mechanisms and to distort their reality which stifles personal growth
    - excessive incongruence thought to be rooted in client's overdependence on others for approval and acceptance
- goals: foster self-acceptance (help them accept their real self) and personal growth
- *therapeutic climate*: warm, supportive, accepting
    - **genuineness**: honest and spontaneous, not phony or defensive
    - **unconditional positive regard**: complete, nonjudgmental acceptance of the client as a person
    - **empathy**: understand the world through the client's point of view (must communicate this to the client)
- therapeutic process:
    - in client-centered, therapist provides **clarification** (empathic mirroring which increases client's awareness of themselves and chance to achieve insight)
    - Greenberg and Johnson developed *emotion-focused coupled therapy*:
        - first have partners identify relationship issues and underlying emotions
        - next have partners address their needs and arrive at solutions

Therapies Inspired by Positive Psychology

- positive psychology emphasizes positive, adaptive, creative and fulfilling aspects of human existence
- **well-being therapy**: enhances self-acceptance, purpose in life, autonomy, and personal growth
- **positive psychotherapy**: gets clients to recognize their strengths, appreciate their blessings, savour positive experiences, forgive those who have wronged them and find meaning in life

Group Therapy: simultaneous treatment of several clients in a group

- typically 4-15 people, 8 is ideal
- work on unmasking problems and then finding solutions
- therapists must still select participants, set group goals, initiate and maintain therapeutic process, protect clients from harm, models supportive behaviour
- advantages:
    - save time and money
    - participants find people with similar and even worse issues than them
    - promotes social skills usage in a safe environment
    - group acts a social support

Evaluating Insight Therapies

- for any therapy, recovery can be accounted by **spontaneous remission**: recovery from a disorder that occurs without formal treatment
    - client improved from therapy or naturally?
- studies show insight therapies are *superior* to no treatment and placebo treatment and the effects of therapy are reasonably durable
    - roughly *equal* efficacy with drug therapies

How do Insight Therapies Work?

- diverse psychotherapies all share **common factors**:
    - therapeutic alliance with professional helper
    - emotional support and empathic understanding from therapist
    - cultivation of hope and positive expectations in client
    - provision of a rationale for client's problems and a plausible method for reducing problems
    - giving client opportunity to express feelings, confront problems, gain new insights and learn new patterns of behaviour

Behaviour Therapies

Behaviour Therapies: application of learning principles to direct efforts to change clients' maladaptive behaviours (not help client gain insight like in insight therapies)

Systematic Desensitization: behaviour therapy used to reduce phobic clients' anxiety responses through counterconditioning

- devised by Joseph Wolpe
- assumption: anxiety responses acquired through classical conditioning
    - neutral stimulus (NS) gains anxiety response of a phobic object/situation (unconditioned stimulus, UCS)
- goal: weaken association between conditioned stimulus (CS) and conditioned response (CR) of anxiety
- first, build **anxiety hierarchy**: a list of anxiety-arousing stimuli ranked by the intensity of their anxiety response (from least to greatest)
- second, train client in deep muscle relaxation
- third, client works through hierarchy while learning to remain relaxed while imagining each stimulus
    - client *imagines* (later usually encounters *real*) the object/situation until it produces little or no anxiety, and then moves up the hierarchy

Aversion Therapy: aversive stimulus is paired with a stimulus that elicits an undesirable response

- goal: condition something with negative responses so that one will come to avoid it
- not widely used, usually part of a larger treatment program if used

Social Skills Training: improves interpersonal skills that emphasizes modelling, behavioural rehearsal and shaping

- group or individual format
- **modelling**: client observes appropriate responses from friends and colleagues
- **behavioural rehearsal**: client practices social techniques in structured role-plays and then eventually in real-life (homework)
- **shaping**: client is encouraged to handle more and more complicated social skills and situations

Cognitive-Behavioural Treatments: varied combinations of verbal interventions and behaviour modification techniques

- combination of cognitive and behaviour therapy
- **cognitive therapy**: specific strategies to correct habitual thinking errors that underlie various types of disorders
    - depression is caused by cognitive errors
    - goal: change clients' negative thoughts and maladaptive beliefs
    - first, clients taught to detect negative automatic thoughts
    - next, behavioural techniques of modelling, systematic monitoring, behavioural rehearsal, homework are used to counteract negative thoughts, maladaptive beliefs and promote desirable behaviour

- Miechenbaum developed **self-instructional training**: clients taught to develop and use verbal statements that help them to cope with difficult contexts
- Zindel Segal developed **mindfulness-based cognitive therapy**: integrates mindfulness meditation and cognitive therapy
    - **mindfulness**: full attention is given to the present-moment experience and that experience is employed equanimously, in that whatever arises is acknowledged and examined nonevaluatively

Evaluating Behaviour Therapies
- not well suited for some types of problems
- there is evidence for its efficacy
- effective in treating phobias, OCD, sexual dysfunction, schizophrenia, drug-related problems, eating disorders, psychosomatic disorders, hyperactivity, autism, mental retardation

Biomedical Therapies

Biomedical Therapies: physiological interventions intended to reduce symptoms associated with psychological disorders
- assumption: psychological disorders caused, at least in part, by biological malfunctions
- people tend to think of psychosurgery and lobotomies, but these went into decline in the 1950s
    - *cingulotomy* still practiced for extreme situations

Psychopharmacotherapy: treatment of mental disorders with medication
- a.k.a. **drug therapy**

Antianxiety Drugs: relieve tension, apprehension and nervousness
- immediately work and are effective, but the effects are short-lived
- prescribed for people with anxiety disorders and also those with chronic nervous tension
- side effects: drowsiness, light-headedness, dry mouth, etc.
- con: potential for abuse, dependence and overdose

Antipsychotic Drugs: gradually reduce psychotic symptoms, including hyperactivity, mental confusion, hallucinations and delusions
- treat schizophrenia and schizoaffective disorders
- decrease activity at dopamine synapses
- side effects: drowsiness, constipation, dry mouth, symptoms of Parkinson's disease (ex. muscle tremors, muscular rigidity)
    - **tardive dyskinesia**: neurological disorder marked by involuntary writhing and tic-like movements of the mouth, tongue, face, hands or feet

- **atypical antipsychotic** drugs effective for those who don't respond to conventional antipsychotics
    - pro: produce fewer undesired side effects than conventional antipsychotics
    - con: increase susceptibility to diabetes and cardiovascular problems
- atypicals now the first line of defense (despite higher costs)

Antidepressant Drugs: gradually elevate mood and help bring people out of depression

- before 1987, 2 main types: tricyclics (ex. Evavil) and MAO inhibitors (ex. Nardil)
    - tricyclics have fewer problems than MAO inhibitors
- today, more likely to prescribe **selective serotonin reuptake inhibitors**, which block the reuptake of serotonin in synapses
    - as effective as tricyclics, with fewer dangerous side effects
    - criticism: increases suicide risk in adolescents and young adults
    - newest class is **selective norepinephrine reuptake inhibitors** (**SNRI**): inhibits reuptake of serotonin and norepinephrine in synapses
        - slightly stronger than SSRIs but more side effects

Mood Stabilizers: drugs used to control mood swings in patients with bipolar mood disorders

- lithium has been used to prevent future manic and depressive episodes, also to bring them out of a current manic or depressive episode
    - levels must be closely monitored, too much lithium can be toxic and lethal
- new alternatives:
    - ex. valproate: as effective as lithium and fewer side effects

Evaluating Drug Therapies

- can be effective for those who don't respond to psychotherapy
- controversial regardless:
    - drugs are not as effective as they are advertised
    - superficial, short-lived curative effects
    - high relapse rates
    - many drugs have damaging side effects
    - pharmaceutical industry has gained substantial influence over research enterprise, research mostly funded by them
        - consequence: minimization of unfavourable results, exaggeration of favourable results and compromised objectivity

Electroconvulsive Therapy (**ECT**): biomedical treatment in which electric shock is used to produce a cortical seizure accompanied by convulsions

- patient given a light anesthetic
- unilateral shock administered to right hemisphere most common, which triggers a brief convulsive seizure
- usage peaked in the 1940s and 1950s, until drug therapies arrived
- controversy:
    - lucrative business for psychiatrist, little effort on their part to administer ECT
    - treatment is painful, dehumanizing and terrifying (however, there have been vast improvements in its applications)
- effectiveness:
    - evidence suggests a *conservative* use of ECT for treating severe mood disorders, those who haven't responded to antidepressants
    - high relapse rate: 50% of patients relapse with a year
    - proposed mechanism:
        - works at neurotransmitter activity, but evidence for this is fragmented and inconclusive
        - opponents suggest patients try to pull out of depression because ECT is so aversive (inconclusive)
- risks:
    - side effects: impaired attention, memory loss, cognitive deficits

New Brain Stimulation Techniques

- **transcranial magnetic stimulation** (**TMS**): temporary enhancement or depression of activity in a specific brain area by means of applying a magnetic field from a coil mounted on a small paddle (non-invasive procedure)
    - found to improve depression symptoms
    - minimal side effects
- **deep brain stimulation** (**DBS**): thin electrode is surgically implanted in the brain and connected to an implanted pulse generator so that various electrical currents can be delivered to brain tissue adjacent to the electrode
    - some success in treating motor disturbances in Parkinson's disease, tardive dyskinesia and schizophrenia

Current Trends and Issues in Treatment

Blending Approaches to Treatment

- clinicians often use several techniques with a client
- practice has become **eclectic**: drawing ideas from 2 or more system of therapy instead of committing to just one system
- **theoretical integration**: 2 ore more systems of therapy are combined to take advantage of the strengths of each

- **technical eclecticism**: borrowing ideas, insights and techniques from a variety of sources while tailoring one`s intervention strategy to the unique needs of each client

Increasing Multicultural Sensitivity in Treatment

- psychotherapy reflects Western cultural values
- ethnic minorities tend to underuse therapeutic services
    - **cultural barriers**: norm is to not seek formal help, but informal help from family members, etc.
    - **language barriers**: mental health services sometimes don't speak the language
    - **institutional barriers**: therapists can't provide for the client because the therapist has not had multicultural exposure
- Canada especially is very multicultural, therapists need to be more sensitive to diverse populations
- *pan-Amerindian* healing movements increasing at Aboriginal centres
- possible solutions:
    - train more ethic minority therapists
    - incorporate cultural factors into the therapeutic approach

Institutional Treatment in Transition

Mental Hospital: medical institution specializing in providing inpatient care for psychological disorders

Disenchantment with Mental Hospitals

- by 1950s, hospitals found to be contributing to disorders, not curing them
    - due to inadequate funding, overpopulation of patients under care of small staffs, environment was demoralizing
- spawned the **community mental health movement** in the 1960s:
    - emphasis on local, community-based care
    - reduced dependence on hospitalization
    - prevention of psychological disorders

Deinstitutionalization: transferring treatment of mental illness from inpatient institutions to community-based facilities that emphasize outpatient care

- prompted by:
    - emergence of effective drug therapies for severe disorders
    - deployment of community mental health centers to coordinate local care
- pros:
    - many have benefited from not being hospitalized or for less time
    - discharged patients enjoy the freedom
- cons:

- many of the discharged had no “halfway houses” to live in and inadequate services to rehabilitate them back into normal society

Mental Illness, the Revolving Door and Homelessness

- admission to psychiatric hospitalization has *increased* = revolving door effect
  - once they stabilize in inpatient care, they are discharged back to a community that doesn’t rehabilitate them effectively, and soon enough their symptoms return and are readmitted
- growing homeless population also blamed on deinstitutionalization
  - important to keep in mind that economic trends have contributed to homeless problem
- solution:
  - some advocate increasing quality and availability of intermediate care facilities and programs

Featured Study: Combining Insight Therapy and Medication

Results

- combined treatment of tricyclic and interpersonal therapy (IPT, emphasis on resolving interpersonal problems and enhancing social supports) had lower relapse rates than either treatment alone and a placebo medication group for geriatric depression

Personal Application: Looking for a Therapist

Where do you find Therapeutic Services?

- private practitioners, community mental health centres, hospital, human service agencies, schools and workplaces

General Information

- no reliable association between professional background and therapeutic efficacy
- comfort with sex of therapist depends on client’s attitude
  - small minority of therapists take advantage of their clients sexually (almost always involve male therapist making advances toward female clients)
- most expensive services provided by private practitioners
- for certain types of problems, some approaches to therapy are more effective than others
- look for:
  - warmth and sincere concern
  - empathy and understanding
  - self-confidence (competency)

- when there's no progress:
    - could be a difficult subject matter or therapist incompetency
- expectations:
    - process is usually slow, so have realistic ones

Critical Thinking Application: From Crisis to Wellness–But was it the Therapy?

Therapy Confounds

- people can improve from completely ineffectual therapy:
    - **placebo effects**: people's expectations lead them to experiences some change even though they received a fake treatment
    - **regression to the mean**: people who score extremely high or low on some trait are measured a second time and their new scores fall closer to the mean (average)
        - people enter therapy in times of severe crisis, they can't get any worse and so they tend to get closer to the mean
- to avoid those confounds, use control groups, random assignment, placebo conditions, statistical adjustments to control for regression and placebo effects etc.

Chapter 4: Sensation and Perception

Sensation: stimulation of sense organs
Perception: selection, organization and interpretation of sensory input

- translating sensory info into something meaningful

Psychophysics: Basic Concepts and Issues

*Psychophysics**: study of how physical stimuli are translated into psychological experience***

Thresholds: Looking for Limits

- Gustav Fechner wanted to determine for any given sense, the **threshold**: dividing point between energy levels that do and do not have detectable effect
- **absolute threshold**: specific type of sensory input that is minimum amount of stimulation an organism can detect
    - no single intensity where subject can jump from detected to completely detected

        - therefore as stimulus intensity increases, subjects' probability of responding gradually increases
    - researchers redefined it to be when stimulus intensity is detected *50% of the time*

Just noticeable difference (**JND**): smallest difference in amount of stimulation a certain sense can detect

- absolute threshold is JND from nothing
- **Weber's Law**: size of JND is a constant proportion of size of initial stimulus
    - constant proportion called *Weber's fraction*
    - ex. lifting weights has a Weber's fraction = 1/30
        - one can tell difference between 300-gram and 310-gram weight, and 310 and 320, etc. (JND = 10)

Psychophysical Scaling

- **Fechner's Law**: magnitude of a sensory experience is proportional to the number of JNDs that the stimulus causing the experience is above absolute threshold
    - constant increments in stimulus intensity (JNDs) produce smaller and smaller increases in perceived magnitude of sensation

Signal-Detection Theory: detection of stimuli involves decision processes as well as sensory processes, which are both influenced by a variety of factors, not only intensity

- **signal detection test**:

	Stimulus was Present	Stimulus was Absent
Subject says "Present"	Hit	False Alarm
Subject says "Absent"	Miss	Correct Rejection

- noise also plays a factor

Subliminal Perception: registration of sensory input without conscious awareness

- *subliminal* means below threshold (subjects don't consciously register stimuli)
- tied up with controversies related to money, sex, religion, rock music
- first hidden message placed in a movie with phrase "Eat popcorn" in New Jersey
- Wilson Bryan Key has written several books claiming subliminal messages in magazine ads to elicit favourable unconscious reactions from consumers
- some subliminal self-help tapes contain messages that helped people seduce unsuspecting listeners
    - later religious overtones added
- Jon Krosnick and others found that subliminal messages influenced subjects' opinions slightly

- many feel subliminal effects are very weak

Sensory Adaptation: gradual decline in sensitivity to prolonged stimulation
- adaptation to certain situation after an amount of time (ex. putting clothes on)
- automatic, keeps mind focus on changes in environment that may signal threats to safety
- probably sculpted by behavioural selection

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Our Sense of Sight: The Visual System

The Stimulus: Light
- light is a form of EM radiation
    - vary in *amplitude* (brightness) and *wavelength* (colour)
    - usually humans see mixtures of several wavelengths
        - *purity*: how varied the mix is, which influences perception of saturation
- humans can only see a small range of the total wavelength
    - ex. can't see ultraviolet or infrared light

Eye: channels light to neural tissue that receives it (retina) and houses that tissue
- living optical instrument that creates an image of visual world on light-sensitive retina lining its inside back surface
- light enters **cornea** and **crystalline lens** (behind cornea) forming upside-down image on retina
- **lens**: transparent eye structure that focuses light rays falling on retina
    - capable of accommodation
        - focus on close object (lens get rounder)
        - focus on distant object (lens get flatter)
- **nearsightedness**: close objects seen clearly, distant objects seen blurry
    - light from distant object falls short
    - cornea or lens bends light too much or eyeball too long
- **farsightedness**: close objects seen blurry, distant objects seen clearly
    - light from close object falls behind retina
    - eyeball too short
- **iris**: coloured ring of muscle surrounding pupil
- **pupil**: opening in centre of the iris that helps regulate the amount of light passing into the rear chamber of the eye
    - **dilation**: more light let in (occurs in dim light)
    - **constriction**: less light let in (occurs in bright light)
- **saccades**: eye moves to scan environment, briefly fixated on various parts of stimuli
- **retina**: neural tissue lining the inside back surface of the eye; it absorbs light, processes images and sends visual information to the brain

    - **cones**: daylight visual receptors (5-6.4 million)
        - produce better visual acuity than rods (sharpness)
    - **rods**: night vision visual receptors (100-125 million)
        - more sensitive to dim light than cones
        - rod-dominated area outside fovea
- **fovea**: centre of retina that contains only cones (greatest visual acuity in this spot)
- **optic disk**: hole in the retina where optic nerve fibres exit eye (blind spot)
    - each eye covers the other eye's blind spot

Dark and Light Adaptation

- **dark adaptation**: eyes become more sensitive to light in low illumination
    - cones adapt faster than rods
    - fully adjust in 30 minutes (considerable change at 10 minutes)
- **light adaptation**: eyes become less sensitive to light in high illumination

Information Processing in the Retina

- light strikes retina's receptors which trigger neural signals that pass into network of cells in retina, which send impulses along optic nerve that eventually reach the brain
- **receptive field of a visual cell**: retinal area that when stimulated, affects firing of that cell
    - variety of sizes and shapes for receptive field
        - ex. circular fields with centre-surround arrangement (in other words, stimulating center of field has opposite effect of stimulating area surrounding center)
    - some retinal cells send signals both toward brain and laterally toward nearby visual cells
- **lateral antagonism**: neural activity in a cell opposes activity in surrounding cells
    - retina compares *relative* light so that contrast is created

Vision and the Brain

- axons leaving back of each eye form optic nerves that travel to **optic chiasm**: point where optic nerves from inside half of each eye cross over and go to opposite hemispheres
- axons of left half of retina of both eyes travel to left hemisphere and vice versa
- main pathway projects into thalamus
    - 90% of axons from retina go to *lateral geniculate nucleus* (LGN)
    - divided into *magnocellular* (handles ex. brightness) and *parvocellular* (handles ex. perception of colour) *channels*
        - engaged in **parallel processing**: simultaneous extraction of different information from the same input
- visual signals are processed in LGN and then projected to primary visual cortex (in the occipital lobe)

- second visual pathway leaves optic chiasm to **superior colliculus**: coordination of visual input with other sensory input

Information Processing in the Visual Cortex
- David Hubel and Torsten Wiesel accidentally found that individual cells in primary visual cortex don't respond to little spots, they are more sensitive to lines, edges, and other complicated stimuli
    - identified various types of specialized cells in primary visual cortex
        - **feature detectors**: neurons that respond selectively to very specific features of more complex stimuli
        - ex. neuron fired more for a vertical line than a horizontal line
- from primary visual cortex, information goes to other cortical areas via:
    - **ventral stream**: processes "*what*" information
    - **dorsal stream**: process "*where*" information
- neurons become even more specialized
    - ex. ultraspecific cells activated by specific *concepts* (involved with memory)

Methods in Vision Research
- fMRI and other methods have been used to investigate brain and visual phenomena
- *McCollough effect*: after-image phenomenon
- **visual agnosia**: inability to recognize familiar objects
    - could still experience McCollough effect

Viewing the World Colour
- perceived light is primarily the dominant wavelength in mixture
- red is longest wavelength, violet is shortest
- colour is psychological interpretation, not physical
- wavelength related to brightness, hue, saturation
- **subtractive mixing colours**: removing wavelengths of light, less light then before
    - ex. blue + yellow = blocks out certain wavelengths to make green
- **additive colour mixing**: superimposing lights, putting more light in mixture
    - human vision parallels additive more than subtractive

Trichromatic Theory of Colour Vision: human eye has 3 types of receptors with different sensitivities to different wavelengths (red, green, blue)
- perceived colour is a ratio of these 3 types of receptors
- proposed by Hermann von Helmholtz
- **colour blindness**: variety of deficiencies in ability to distinguish among colours
    - occur more in males
    - most are *dichromats*: people with 2 colour channels
        - 3 types, which provides evidence for trichromatic theory

- can't account for:
    - **complementary colours**: colours that produce grey when mixed together
    - **after-image**: visual image that persists after removal of stimuli
        - after-image is of the complement colour

Opponent Process Theory of Colour Vision: colour perception depends on receptors that make antagonistic responses to 3 pairs of colours

- green vs. red
- yellow vs. blue
- black vs. white
- proposed by Ewald Hering
- theory can explain after-image and need for 4 colour names (yellow, red, green, blue)
- also can explain colour blindness
    - ex. why it is hard to distinguish red and green

Reconciling Theories of Colour Vision

- both theories explain colour vision
- George Wald demonstrated eye has 3 types of cones that are most sensitive to different band of wavelengths (blue, red, green) = supports trichromatic theory
- cells inhibit and excite to antagonistic colours in retina, LGN, visual cortex = supports opponent process theory
- trichromatic theory true for receptors, opponent theory true for later processing
- four colour categories required to facilitate human visual system to distinguish one object form another (evident from map-making)

Perceiving Forms, Patterns and Objects:

- **reversible figure**: drawing compatible with 2 interpretations that shift back and forth
    - people can perceive things differently = subjectivity
- **perceptual set**: readiness to perceive a stimuli a certain way
    - influences perception of person
- **inattentional blindness**: focussing on certain areas, neglecting other areas
    - subjects in a study told to attend to a basketball being passed around did not notice a woman carrying an umbrella who entered the scene

Feature Analysis: detecting specific elements in visual input and assembling them into a more complex form

- **bottom-up processing**: progression from individual elements to whole
    - support from specialized feature detectors found by Hubel and Wiesel

- **top-down processing**: progression from whole to individual elements
    - ex. predicting words before seeing the letters
    - ex. **subjective contours**: perception of contours where none exist
- both processes have niches in perception for now

Looking at the Whole Picture: Gestalt Principles

- whole can be greater than sum of its parts
- **phi phenomenon**: illusion of movement created by visual stimuli in rapid succession
    - ex. TV, movies, etc.
- principles on how visual stimuli organize into discrete forms:
    - **figure and ground**: figure is object, ground is the background
    - **proximity**: things close together seem to belong
    - **closure**: sense of completeness
    - **similarity**: grouping similar stimuli
    - **simplicity**: organize things as simply as possible
        - *law of Pragnanz*: tendency to group elements to form "good form"
    - **continuity**: connecting points to form "smoothness"

Forming Perceptual Hypotheses

- **distal stimuli**: stimuli that lie in the distance (world outside the body)
    - ex. a square
- **proximal stimuli**: stimuli energies that impinge directly on sensory receptors
    - distorted 2-D versions of actual (ex. trapezoidal-looking square)
- how do people work with distorted images to get an accurate picture of world?
    - **perceptual hypothesis**: inference about which distal stimuli could be responsible for the proximal stimuli sensed
        - people guess what distal stimulus is being perceived
        - context is important

Perceiving Depth of Distance

- **depth perception**: interpretation visual cues that indicate how near or far objects
- **binocular depth cues**: distance based on differing views of each eye
    - **retinal disparity**: object produced slightly different location in each eye
        - closer object = higher retinal disparity
    - **convergence**: sensing eyes converging toward each other as they focus on closer objects
- **monocular depth cues**: distance based on image in either eye alone
    - **motion parallax**: images of objects at different distances moving across the retina at different rates

        - ex. when moving your head, closer objects move more in field of vision than farther objects
    - **pictorial depth cues**: clues about distance that can be given in flat picture
        - linear perspective: lines converging in the distance
        - texture gradients: coarser texture farther away
        - interposition: object comes in between you and another object
        - relative size: closer objects appear larger
        - height in plane: closer objects lower on visual field
        - light and shadow: light and dark patterns create 3-D image

Perceptual Constancy: tendency to experience stable perception as sensory input changes

- distal stimulus is understood even though proximal stimuli changing

Optical Illusions: inexplicable discrepancy between appearance of stimuli and its reality

- *Müller-Lyer illusion*: perceived different lengths of 2 lines
    - maybe caused by size constancy processes and misperception of depth
- *Ponzo illusion*: perceived length difference of 2 horizontal lines
    - maybe because converging lines convey linear perspective
- *Ames illusion*: room is a trapezoid
- **impossible figures**: objects represented as 2-D but cannot exist as 3-D
    - some impossible illusions are natural, ex. moon illusion
- research shown diff. cultures show different susceptibility to specific illusions
    - ex. Western people more susceptible to Müller-Lyer illusion
        - reason: possibly because Western world more angular and more dominated by buildings, so a Westerner would be inclined to see corners of a building

Vision for Perception and Vision for Action

- Goodale and Humphrey suggest vision serves to:
    - create an internal visual of external environment → vision for perception
    - guiding your actions to respond with environment → vision for action
- studied DF who suffered problems with vision
    - could see colour and detail, but not contour and form = could not identify objects (agnosia)
    - could not copy objects, but could draw them from memory
- suggested 2 different visions which follow 2 different paths:
    - *dorsal stream* for visual control of action
    - *ventral stream* for perception of external world

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Auditory System

- distal stimulus produces proximal stimulus in form of sound waves

The Stimulus: Sound

- vibrations of molecules (generated by vibrating objects)
    - characterized by amplitude, wavelength, purity
- wavelengths of sound = *frequency* (Hz) or cycles/s
    - perceived as *pitch*
    - generally, higher frequency = higher pitch
- humans can hear 20 to 20,000 Hz
- generally, greater amplitude (dB, *decibels*) = louder sound
    - rule of thumb: perceived loudness doubles every 10 decibels
- loudness depends on both amplitude and frequency, which yields different thresholds
- most sounds are complex, mixtures of frequency
    - complexity influences perceived *timbre*
        - ex. perceiving the difference between sounds of violin and French horn

Sensory Processing in the Ear

- parts: external, middle, inner ear
- external ear collects vibration of air molecules
    - **pinna**: sound collecting cone
        - sound waves collected by pinna sent along auditory canal to eardrum (which vibrates in response)
- middle ear depends on vibration of moveable bones
    - **ossicles**: hammer, anvil, stirrup
        - receive vibrations from eardrum
        - amplify tiny changes in air pressure
- inner ear:
    - **cochlea**: fluid-filled, coiled tunnel containing the receptors for hearing
        - sound enters through *oval window*
        - neural tissue lies in cochlea on **basilar membrane**: runs length of spiralled cochlea
            - holds auditory receptors (called *hair cells*)
        - hair cells stimulated by sound, send neural impulses to brain (through thamalus to auditory cortex, mostly located in temporal lobes)
    - studies show parallel processing of input

Auditory Perception: Theories of Hearing

- theory of hearing based on pitch

    - **place theory**: perception of pitch corresponds to vibration of different portions or places along basilar membrane
        - Hermann von Helmholtz suggested different frequency vibrated specific portions in basilar membrane, creating a different pitch
    - **frequency theory**: perception of pitch corresponds to rate or frequency at which entire basilar membrane vibrates
- both theories valid
    - place theory: hair cells do not act independently, but peak at a particular place
    - frequency theory: neurons have maximum rate of 1000 impulses/s
        - higher frequencies explained through **volley principle**: group of auditory nerve fibres fire neural impulses in rapid succession, creating volleys of impulses
    - under 1000 Hz: pitch perception handled by frequency coding
    - between 1000-5000 Hz: pitch perception depends on both frequency & place
    - over 5000 Hz: pitch perception handled by place coding

Auditory Localization: locating source of a sound in space
- *intensity* (loudness): louder = closer, vice versa
- *timing of sounds arriving at each ear*: difference between ears also localizes

Music and Its Effects
- music can increase spatial abilities, ex. Mozart effect
    - debated
- music training can induce functional & morphological changes in brain
    - facilitate sensitivity to human emotion with *speech prosody* (melody = intonation and the rhythm = timing)

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Chemical Senses

Taste
- **gustatory system**: sensory system for taste
- physical stimuli are chemical substances that dissolve in water
- gustatory receptors are clusters of cells found in **taste buds** that line trenches around tiny bumps on tongue
- receptor cells absorb chemicals dissolved in saliva, triggering neural impulses (thalamus to cortex)
- new cells born at the edge, move toward centre to die (life span of 10 days)
- **primary tastes**: sweet, sour, bitter, salty (distributed unevenly across tongue)

- taste perception depends on complex patterns of neural activity
- some taste preference is innate (ex. infant like sweets)
    - preference is flexible: variability between cultures (ex. worms)
- Linda Bartoshuk found sensitivity varies person to person due to taste bud density (genetic)
    - supertaster has 4 times more taste buds
        - ex. react much more strongly to chemical in peppers
        - have better health habits
        - more often women
            - possible evolutionary reason: increases sensitivity to high-caloric food = increased survival
- perception of flavour depends on taste, smell and tactile sensation

Smell

- **olfactory system**: sensory system for smell
- physical stimuli are chemical and volatile substances that are carried in air, which are dissolved in the nose's mucus
- receptors: **olfactory cilia** in upper portions of nasal passages (life span of 30-60 days)
- olfactory receptors connect with olfactory bulb, which is in cortex (no relay needed through thalamus)
- Linda Buck and Richard Axel found gene set of 1000 different genes that affect olfactory receptor operation
    - highly specialized, each detecting a very limited number of odours
- sensory adaptation: perceived strength of odour reduces to less than half in 4 minutes
- also involved in communication
    - **pheromones**: chemical messages, typically imperceptible, that can be sent by one organism and received by another member of the same species
        - often linked to sexual activity and physical attraction

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Our Sense of Touch: Sensory Systems in the Skin

- physical stimuli are mechanical, thermal and chemical energy that impinge on skin
- produce perceptions of tactile stimulation, warmth, cold, pain

Feeling Pressure

- cells responding to touch are sensitive to specific patches of skin
- sensory adaptation: ex. gradual perception of pressure drops if constant pressure is applied on skin
- nerve fibres travel up spinal cord to opposite side of brain (goes through thalamus to somatosensory cortex)

- some feature detectors, ex. movement across skin in specific direction

Feeling Pain

- pain is necessary in survival
- pain receptors are free nerve endings in skin
- transmit messages through 2 ways:
  - **fast pathway**: registers localized pain and relays it to cortex
    - mediated by thicker myelinated neurons called *A-delta fibres*
  - **slow pathway**: less localized pain, longer-lasting aching or burning pain after initial injury
    - depends on unmyelinated neurons called *C fibres*
- pain can be influenced greatly by expectations, personality, mood, etc.
- pain can be distracted
  - ex. stubbed thumb, your baby starts crying, pain ignored
  - cognitive and emotional processes in brain somehow block pain signals from peripheral receptors
  - Ronald Melzack and Patrick Wall suggest **gate-control theory**: incoming pain sensations must pass through a "gate" in spinal cord that can be closed (blocking certain signals)
    - explains how expectation or attention shuts off pain
    - suggests pain is a multi-dimensional phenomena, results from variety of influences
      - ex. pain in phantom limb
  - other reason: **endorphin** (body's morphine-like painkiller)
    - studies suggest them to be underlying factor in placebo effect and acupuncture
  - other reason: descending neural pathway that mediates pain suppression
    - originates in midbrain area called **periaqueductal gray (PAG)**
    - releases serotonin, which release more endorphins to inhibit neurons transmitting pain
    - activation of it produces analgesic effect
  - other reason: **glial cells** (astrocytes and microglia) may modulate chronic pain (amplifying pain)

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Our Other Senses

Kinesthetic System: monitors positions of various parts of body

- allows you to double-check where your limbs are
- receptors lie in:
  - *joints*: indicates how much they are bent
  - *muscles*: register tautness or extension

- most stimulation transmitted to brain through same pathway as tactile stimulation (but they are kept separate)

Vestibular System: responds to gravity and keeps you informed of body's location in space

- sense of balance, equilibrium, compensating change in body position
- semicircular canals in inner ear; 3 inner tubes joined at the base
    - shifts in fluid detected by hair cells similar to those on basilar membrane

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Featured Study: Decoding Speech Prosody: Do Music Lessons Help?

Results and Discussion

- 36 children given formal training in music/arts training, 13 had no training
- fearful/angry sentences were better identified by trained children
- training generally enhances one's ability to decode emotion in speech prosody
- singing lessons only emphasize non-prosodic uses of voice

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Personal Application: Appreciating Art and Illusion

General Information

- artistic works accurately portray reality, create illusions of reality, create interpretation of reality, question nature of reality

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Critical Thinking Application: Recognizing Contrast Effects: It's All Relative

General Information

- **door-in-face technique**: making large request that is likely to be rejected as a way to increase chances that a consequent smaller request is accepted
- people are easily swayed by *contrast effects*
- **comparitors**: people, places, objects, events and other standards used as baseline for comparisons in making judgement
- exposing male subjects to a TV show dominated by attractive women increased their ratings of their own attractiveness

Chapter 13: Stress, Coping, and Health

Introduction

- 40% of students experience *high* stress at exam time
    - prompted *stress-buster* events during exam time
- stress is normal and may lead to adaptive changes, but overwhelming stress can yield negative consequences
- **biopsychosocial model**: physical illness is caused by a complex interaction of biological, psychological and sociocultural factors
- transition from traditional view of physical illness as purely biological phenomena
    - prior to 20th century, most physical illnesses were *contagious diseases* caused by *infectious agents* (physical phenomena)
    - now filled by *chronic diseases*, whereby psychological factors play a large role
- **health psychology**: concerned with how psychosocial factors relate to the promotion and maintenance of health and with the causation, prevention and treatment of illness

The Nature of Stress

Stress: any circumstances that threaten or are perceived to threaten one's well-being and that thereby tax one's coping abilities

- ex. threat to immediate physical safety, self-esteem, reputation, etc.
- stress exists as major stressors (ex. natural disasters) and minor stressors (ex. waiting in line)
- major stressors can trigger minor stressors
- minor stressors can produce significant harmful effects
    - reason: stress can be cumulative
- people's *appraisals* of events determine what they find stressful
    - an event can be a stressor for only certain individuals

Major Types of Stress

Distinctions

- **acute stressor**: threatening event with relatively short duration and clear endpoint
- **chronic stressor**: threatening event with relatively long duration and no readily apparent time limit
- 4 principle types: frustration, conflict, change and pressure

1) Frustration: occurs in any situation where the pursuit of some goal is thwarted

- everyone deals with virtually everyday
    - traffic jams, difficult commutes, etc. can elicit anger and aggression

- can be brief and insignificant (waiting in line) or highly stressful (failure or losing)

2) Conflict: occurs when 2 or more incompatible motivations or behavioural impulses compete for expression

- higher levels of stress associated with higher levels of anxiety, depression and physical symptoms
- **approach-approach conflict**: choice must be made between 2 attractive goals
    - ex. “Should I go golfing or play hockey this afternoon?”
    - tends to be least stressful type
    - tend to have happy results, but sometimes can be a troublesome decision-process and result in possible regret if one is feeling very ambivalent
- **avoidance-avoidance conflict**: choice must be made between 2 unattractive goals
    - ex. “Should I stay at my crappy job or face unemployment”
    - most unpleasant and highly stressful
- **approach-avoidance conflict**: choice must be made about whether to pursue a goal that has both attractive and unattractive aspects
    - ex. risking rejection by asking your crush out
    - common and can be quite stressful
    - often produce **vacillation**: jumping back and forth (indecisiveness)
        - not unique to humans, found in rats through experimentation whereby they hovered in between a decision

3) Life Change: any noticeable alternations in one’s living circumstances that require readjustment

- stress can accompany *positive* events as well because they produce *change*
    - more positive events than negative events in tuberculosis patients
- Holmes & Rahe developed *Social Readjustment Rating Scale* (SRRS), which measures life change as a form of stress
    - assigns numerical values (out of 100) to 43 major life events
    - person’s stress index is the sum of all the magnitudes of relevant life events
    - higher scores on SRRS associated with greater vulnerability to physical illness and psychological problems
    - some argue SRRS does not measure *change* exclusively because most described major life events are negative, rather SRRS measures a wide range of stressful events

4) Pressure: expectations or demands for one to behave in a certain way

- ex. pressure to *perform* effectively at work
- ex. pressure to *conform* to norms of a society
- Weiten created a scale to measure pressure as a form of stress

    - strong relationship between pressure and variety of psychological symptoms and problems
- pressure on academic pursuits may actually undermine performance
- pressure can be external, but is often self-imposed

Responding to Stress

Stress Response

- people's response to stress is complex and multidimensional
- stress response can be analyzed at an emotional, physiological and behavioural level

Emotional Responses

- no strong links between stressful events and specific emotion
- strong links between **appraisals** (specific cognitive reactions to stress) and *specific emotions*
    - ex. self-blame tends to lead to guilt
- common emotional responses to stress: anger, annoyance, rage, apprehension, anxiety, fear, dejection, sadness and grief
- positive emotions can also be experienced in response to stress
    - frequency of positive emotions correlated with resiliency
    - appear to help resiliency by means of **broaden-and-build theory of positive emotions**:
        - positive emotions alter people's mindsets, broaden scope of attention and increase creativity and flexibility in problem solving
        - positive emotions undo lingering effects of negative emotions, which prevent physiological responses of stress
        - positive emotions promote rewarding social interactions that help build valuable social support, enhanced coping strategies and other enduring personal resources
    - positive emotional style associated with better well-being, lowered stress hormones and enhanced immune response
- strong emotional arousal can interfere with efforts to cope with stress
    - lower levels of emotional arousal is normal
        - evolutionary significance: ex. painful emotion allows us to take precaution in situations
- disrupted coping explained by **inverted-U hypothesis**: predicts task performance should improve with increased emotional arousal up to a point, after which further emotional arousal is disruptive and performance deteriorates
    - highest performance level called **optimal level of arousal**
    - optimal level decreases with *task complexity*
        - simple task: optimal level at higher level of arousal

            - in other words: on an easy task, one works best at a high level of arousal
        - complex task: optimal level at lower level of arousal
            - in other words: on a hard task, one works best a low level of arousal

Physiological Responses

- **fight-or-flight response**: physiological reaction to a threat where the autonomic nervous system (ANS) is mobilized to either attack (fight) or flee (flight)
    - controlled by **sympathetic division** of the ANS
        - ex. acceleration of breathing and heart rate, decrease in digestive processes
    - adaptive response in animal kingdom, which carried over to humans where it is less effective since most stress can't be solved by it
    - some propose that females show more prevalence in caring for offspring and seeking help when under stress, which would make flight-or-flight response non-adaptive
        - propose **tend and befriend response**: when reacting to stress, females allocate more effort to the care of offspring and seek help and support
        - same neuroendocrine core of stress response though between males and females
- **Hans Selye** coined the term stress
    - proposed stress reactions are non-specific to the stressor from animal studies
    - **general adaptation syndrome**: model of body's stress response, consisting of 3 stages: alarm, resistance and exhaustion
        - latter 2 stages apply when stress is *prolonged*
        - **alarm stage**: organism recognizes threat and must utilize its resources to combat the challenge (basically the fight-or-flight response)
        - **resistance stage**: physiological changes stabilize due to prolonged threat as coping efforts begin
        - **exhaustion stage**: body's resources used to combat threat or maintain physiological changes over a substantial period of time deplete
            - overactivation of the stress response may lead to **diseases of adaptation**: harmful long-term physiological effects
    - later proposed "strain" would be a more appropriate term
- **path 1**: hypothalamus activates sympathetic division of ANS → large amounts of *catecholamines* released into bloodstream by adrenal medulla → catecholamines radiate through the body producing physiological changes (ex. increased heart rate)

- **path 2**: hypothalamus sends signals to the pituitary gland → pituitary secretes *ACTH* (hormone) → ACTH stimulates adrenal cortex to release *corticosteroids* → corticosteroids stimulate the release of chemicals that help increase energy and inhibit tissue inflammation in case of injury
- stress response can interfere with **neurogenesis** (regeneration of brain cells) in hypothalamus

Behavioural Responses

- **coping**: active efforts to master, reduce or tolerate demands of stress
    - neutral definition because coping can be adaptive or maladaptive
    - commonsense usage conveys healthy coping
    - coping style is a stable, dispositional attribute (Norm Endler):
        - *Coping Inventory for Stressful Situations* (CISS) measures 3 stable coping dimensions: task-oriented coping, emotion-oriented coping and avoidance-oriented coping
- **learned helplessness**: passive behaviour produced by exposure to unavoidable aversive events
    - organism believes events are beyond their control
    - a.k.a. *behavioural disengagement*
    - associated with increased distress as opposed to less, and also depression
    - however, new research suggests people who better disengage from unattainable goals report better health, exhibit lower levels of key stress hormones and proteins though to underlie disease processes
- **blaming oneself**:
    - Albert Ellis called this **catastrophic thinking**: aggravates and perpetuates emotional reactions to stress that are often problematic
    - Aaron Beck argues negative self-talk contributes to depressive disorders
- **aggression**: any behaviour intended to hurt someone, either physically or verbally
    - **frustration**-**aggression hypothesis**: aggression is always caused by frustration
        - causally-related, but not always one-to-one correspondence
    - **displacement**: diverting anger onto a substitute (Freud)
        - **catharsis**: release of emotional tension by means of aggression
        - catharsis not supported by research since aggressive behaviour may not purge emotional tension because others may aggress back
- **reduced impulse control** and **self-indulgence**:
    - one may use satisfactory activities to compensate for lacking satisfaction in other areas of one's life
    - youth gamblers found to use more maladaptive coping styles than youth non-gamblers

        - scored lower on task-oriented coping (constructive) and higher in avoidance-oriented coping
        - problem gambling is twice more prevalent in males than females
    - **Internet addiction**: spending an inordinate amount of time on the Internet and inability to control online use
        - appears to be not rare
        - debate as to whether it classifies as an *addiction*
- **defensive mechanisms**: largely unconscious reactions that protect a person from unpleasant emotions such as anxiety and guilt
    - **intellectualization**: cutting off emotion from hurtful situations or separating incompatible ideas so they appear unrelated
    - **undoing**: atoning for or trying to magically dispel unacceptable desires or acts
    - **overcompensation**: covering up felt weakness by emphasizing desirable characteristics, or making up for frustration in one area by overgratification in another
    - goal: shield person against emotional discomfort (mainly anxiety, also anger, guilt and dejection)
    - operate through *self-deception* whereby reality is distorted
    - originally proposed as unconscious, but newer manoeuvres found that are conscious
    - disadvantages of defensive coping (avoidant strategy):
        - avoid genuine solutions to problems
        - related to poorer health because people delay facing up their problems
        - wishful thinking from *denial* and *fantasy* accomplish little
    - advantages of defensive coping:
        - promotes **positive illusion** of self which is non-characteristic of depression:
            - depressed people have less favourable self-images, lower locus of control (control over world), less unrealistic optimism in making projections of the future
            - controversial: deception vs. beneficial
                - perhaps small illusions are beneficial as opposed to extreme distortions
- **constructive coping**: relatively healthful efforts that people make to deal with stressful events
    - no foolproof strategy, but some key themes would be:
        - confronting problems directly (task- and action-oriented)
        - realistic appraisal of stress and coping resources
        - learning to recognize and inhibit, potentially disruptive emotional reactions
        - making efforts to ensure that body is not vulnerable to potential damaging effects of stress

The Effects of Stress on Psychological Functioning

Impaired Task Performance
- pressure inhibits performance
- Baumeister believes pressure to perform makes people self-conscious, which disrupts their **attention**
    - Keinan found stress increased tendency for subjects to jump to conclusions too quickly without considering all options and to do poor, unsystematic review of their available options

Burnout: involves physical and emotional exhaustion, cynicism and lowered sense of self-efficacy that can be brought on gradually by chronic work-related stress
- antecedents: work overload, lack of control over work responsibilities and outcomes, inadequate recognition for work, fear of job loss, poor interpersonal relationships at work, risk of injury
- consequences: associated with increased absenteeism, reduced productivity at work, increased vulnerability to health problems

Post-Traumatic Stress Disorder (PTSD): enduring psychological disturbance attributed to the experience of a major traumatic event
- came to the forefront after Vietnam War, when veterans experienced a host of psychological difficulties
- increasing rates among police officers, firefighters, ambulance attendants, paramedics, transit workers

Psychological Problems and Disorders
- chronic stress can lead to poor academic performance, insomnia, sleep disturbances, sexual difficulties, alcohol abuse, drug abuse, depression schizophrenia, anxiety disorders, PTSD

Positive Effects
- received attention from positive psychology
    - emphasis on well-being, hope, courage, tolerance, perseverance, resilience
- stress can promote personal growth or self-improvement as a result of personal changes for the better

The Effects of Stress on Physical Health

Psychosomatic diseases: genuine physical ailments that were thought to be caused in part by stress and other psychological factors

- ex. high blood pressure, peptic ulcers, asthma, skin disorders, migraine, tension headaches
- not to be confused with *hypochondriasis*: physical ailments "all in one's head"
- term fell out of popularity in 70s, because the physical ailments are not a special category

Type A Personality, Hostility and Heart Disease

- *atherosclerosis* (narrowing of coronary arteries, usually caused by fatty deposits and debris collecting on inner walls of arteries) causes **coronary heart disease** (reduced blood flow in coronary arteries)
    - other risk factors: smoking, lack of exercise, high cholesterol levels, high blood pressure
    - C-reactive protein (CRP) in blood helps physicians estimate coronary risk
- coronary risk associated with **Type A personality**: includes 3 elements: strong competitive orientation, impatience and time urgency, and anger and hostility
    - ambitious perfectionists, who are exceedingly time-conscious
- **Type B personality**: relatively relaxed, patient, easygoing, amicable behaviour
    - opposite of Type A personality
- **precocity-longevity hypothesis**: those who find success early tend to die earlier too
    - tend to be people with Type A personalities
- modest link found between coronary risk and Type A personality
- stronger link found between Type A's *anger and hostility* and coronary risk

Emotional Reactions, Depression and Heart Disease

- some research supports hypothesis that mental stress and subsequent emotional reactions can increase acute cardiac symptoms and risk of heart attack in individuals with coronary heart disease
- stressful task increased CRP levels in subjects, more so in those with coronary disease
- **depression** is also a risk factor for heart disease, said to double the risk
    - experts said heart disease causes depression, new research suggests the opposite
    - however, it's probably a bi-directional relationship (both influence each other)

Stresses, Other Diseases and Immune Functioning

- life stress questionnaires allowed correlations between stress and a variety of disorders to be found
- stress and disorders possibly linked by weakened **immune response**: body's defensive reaction to invasion by bacteria, viral agents or other foreign substances

- impaired immune system associated with finals week and with higher scores on SRRS
- chronic stress can reduce both *cellular immune response* (attacks intracellular pathogens, ex. virus) and *humoral immune response* (attacks extracellular pathogens, ex. bacteria)
    - may also produce **premature aging of immune system cells**, which may explain why people who are stressed out look old and haggard
- **duration** of stress associated with extent of immune system suppression

Sizing Up the Link between Stress and Illness

- most research is *correlational*
    - perhaps third variable at work, ex. neuroticism
- strength of relationship is *modest* (r = 0.20-0.30)

Factors Moderating the Impact of Stress

Social Support: various types of aid and emotional sustenance provided by members of one's social networks

- positive correlation between high social support and greater immune functioning
- associated favourably with physical health and increased longevity
- provides a buffer during times of high stress and other positive effects during non-high stress times
- strong sense of connection to community associated to good physical and mental health
- *social bonds* do not equate social support since they can be a source of stress and not support
    - social bonds can be a source of social conflict, which can increase susceptibility to disease

Optimism and Conscientiousness

- **optimism**: general tendency to expect good outcomes
    - correlated with good health in university students, improved immune functioning, more adaptive coping (action- and problem-focused coping), likely to seek social support emphasize the positive in their appraisals of stressful events
- **optimistic explanatory style**: attributing setbacks to temporary situational factors
    - associated with relatively good health, increased longevity, other better life outcomes
    - opposite of **pessimistic explanatory style**: attributing setbacks to personal shortcomings
- **conscientiousness**: marked by "constraint"
    - predicted greater longevity

    - fosters better health habits, people gravitate toward healthier environments and are less reactive to stress

Health-Impairing Behaviour

Smoking

- greater risk of premature death
- life is estimated to be 13-14 years shorter
- increases risk for lung cancer and heart disease, and other cancers and pulmonary diseases
- *second-hand smoke* and *environmental tobacco smoke* can increase risk of others for a variety of illnesses
- giving up smoking decreases health risks considerably
- hard for people to give up smoking because it is a form of pleasure, they worry about cravings and they feel less able to cope with stress if they were to quit
- low long-term success rates and people often relapse
    - however, many people fail several times before eventually succeeding

Poor Nutritional Habits

- heavy consumption of foods that elevate serum cholesterol level increases risk of cardiovascular disease
- dietary factors also influence risk of cardiovascular diseases
- high salt intake contributes to hypertension (debate over role)
- high caffeine consumption increases risk of hypertension
- high-fat diets implicated in some forms of cancer
- menopausal women at higher risk for osteoporosis due to inadequate calcium intake

Lack of Exercise

- regular exercise associated with longevity
    - enhances cardiovascular fitness, thereby reducing risk for cardiovascular problems
    - indirectly reduces risk for obesity-related health problems
    - diminishes chronic inflammation
    - can serve as stress buffer
        - people tended to show less reactivity to stress
- exercise can facilitate neurogenesis

Alcohol and Drug Use

- drug and alcohol use increases risk for a variety of health problems, ex. liver disease, gastrointestinal problems, etc.

Behaviour and AIDS

- **acquired immune deficiency syndrome** (**AIDS**): disorder in which the immune system is gradually weakened and eventually disabled by the human immunodeficiency virus (HIV)
    - AIDS is the final stage of the HIV infection process, typically 10 years later
    - body left defenceless against other diseases
- *highly active antiretroviral therapy* (HAART) helps infected individuals survive substantially longer
    - however, long-term efficacy still unknown, HIV strains evolve and some patients don't respond well to the new drugs
- transmission:
    - person-to-person contact involving exchange of bodily fluids
    - 2 principal modes of transmission in North America has been sexual contact and intravenous (IV) drug users
    - male to female transmission more likely than female to male transmission
    - no evidence that infection can spread through casual contact
- misconceptions:
    - people have unrealistic fear that the slightest contact with an AIDS person will transfer the virus
    - young heterosexuals who are sexually active with a variety of partners downplay their risk for HIV and feel they're safe if they avoid IV drug use and sexual relations with gay and bisexual men
    - people infected with AIDS virus look ill = not true
    - 77% of those who tested HIV-positive were previously unaware of their infection
- prevention:
    - sex with fewer partners and using condoms
    - *belief in a just world* (everything that happens is justified) associated with low condom use

How Does Health-Impairing Behaviour Develop?

- develop over time, not abruptly
- many are quite pleasant
- the risks are far away down the road
- people underestimate the risk of their own health-impairing behaviours while viewing the risks of others' self-destructive behaviours more accurately
    - ex. smoking will lead to lung cancer in *someone else*

Reactions to Illness

Deciding to Seek Treatment

- people high in anxiety, neuroticism or more internally-attuned tend to report symptoms of illness

- city-dwelling women with higher incomes most likely to visit the doctor
- people often delay seeking a doctor when symptoms arise because:
    - they misinterpret and downplay the significance of their symptoms
    - they fret about looking silly if the problem turns out to be nothing
    - they worry about "bothering" their physician
    - they are reluctant to disrupt their plans
    - they waste times on trivial matters, ex. packing clothes before going to the emergency room

Communicating with Health Providers

- barriers to effective provider-patient communication
    - visits are brief, allowing for little discussion
    - many providers use too much medical jargon and overestimate patients' understanding of technical terms
    - patients may forget to ask questions or avoid asking for fear of a serious diagnosis
    - patients can be afraid to challenge doctor's authority = more passive role

Adhering to Medical Advice

- adherence occurs 30%-60% of the time
- factors of non-compliance:
    - patient fails to understand instructions
    - instructions are aversive or difficult
    - patient has negative attitude toward physician

Featured Study: Is Depression a Risk Factor for Heart Disease?

Results & Discussion

- those with minor depression or major depression showed elevated cardiac mortality rates for both subjects with pre-existing heart disease and subjects free of heart disease at the study's beginning
- therefore: depression contributed to cardiac disease, since depressive disorders preceded it
- those with major depression had triple cardiac mortality rates

Personal Application: Improving Coping and Stress Management

Main Theme

- managing stress is about *confronting* it and engage in *constructive coping*

Reappraisal: Ellis's Rational Thinking

- **rational-emotive therapy**: approach that focuses on altering clients' patterns of irrational thinking to reduce maladaptive emotions and behaviour
    - created by Albert Ellis
    - **maladaptive thinking underlies problem emotions and behaviour**
- problematic emotional reactions caused by catastrophic thinking: unrealistically negative appraisals of tress that exaggerate the magnitude of one's problems
- A-B-C model:
    - **Activating event**: event that produces stress
    - **Belief system**: belief about the event or appraisal of the stress
        - people often view minor setbacks as disasters
    - **Consequence**: consequence of negative thinking
        - negative appraisal leads to emotional distress
    - B causes C, not A (which is what people think)
- solution:
    - learn to detect catastrophic thinking and hot to dispute irrational assumptions that cause it (scrutinizing one's reasoning)

Using Humour as a Stress Reducer

- humour can moderate stress
- *Humour Styles Questionnaire* assesses individual differences in humour sense
- high-humour people take themselves less seriously than tragedies will be less emotionally-damaging

Releasing Pent-Up Emotions

- efforts to suppress emotions like anger associated with elevated blood pressure, increases stress, autonomic arousal and experience of more negative emotions
- physiological arousal can be reduced by expressing emotions
- emotional disclosure associated greater immune functioning

Managing Hostility and Forgiving Others

- hostility associated with increased risk for heart attacks and other types of illness
- forgiving counteracts desire to seek revenge or avoidance
    - associated with better adjustment and well-being

Learning to Relax

- can sooth emotional turmoil and reduce problematic physiological arousal
- Benson's *relaxation response*:
    - requires quiet environment
    - a mental device that produces a constant stimulus, ex. sounds repeated repetitively

    - passive attitude
    - comfortable position

Minimizing Physiological Vulnerability

- good nutrition, adequate sleep, moderate exercise, avoiding drugs and alcohol
- find an exercise activity you find enjoyable
    - increase participation gradually, exercise regularly without overdoing it, reinforce efforts

Critical Thinking Application: Thinking Rationally about Health Statistics and Decisions

Evaluating Statistics on Health Risks

- correlation don't imply causation
- statistical significance does not imply **practical significance**
    - using larger groups yield more statistically significant results by finding weak relationships and small differences in groups which can be practically insignificant
- **base rate** (% of prevalence) needs to be considered

Thinking Systematically about Health Decisions

- seek information to reduce uncertainty
    - ex. conflicting information, quantify the degree of uncertainty
- make risk-benefit assessments of the health decision
- list alternative courses of action and consider the pros and cons of each