1.1 THE SCIENCE OF PSYCHOLOGY

Psychology—The scientific study of behavior, thought, and experience, and how they can be affected by physical, mental, social and environmental factors.

The Scientific Method

Scientific Method—A way of learning about the world through collecting observations, developing theories to explain them, and using the theories to make predictions.

- The scientific method involves a dynamic interaction between hypothesis testing and the construction of theories.

Hypothesis: Making Predictions

Hypothesis (Plural: Hypotheses)—A testable prediction about processes that can be observed or measured.

- Hypothesis can be supported or rejected (you do not prove a hypothesis), and scientific hypothesis must be testable.

Pseudoscience—An idea that is presented as science but does not actually utilize basic principles of scientific thinking or procedure.

Theories: Explaining Phenomena

Theory—An explanation for a broad range of observations that also generates new hypotheses and integrates numerous findings into a coherent whole.

- In other words, theories are general principles or explanations of some aspect of the world (including human behavior), whereas hypotheses are specific predictions that can test the theory or, more realistically, specific parts of that theory.
- Theories are built from hypotheses that are repeatedly tested and confirmed.
- An essential quality of scientific theories is that they can be proved false with new evidence. In fact, any scientific theory must be proven falsifiable; just as researchers can discover evidence that is in support of the theory, they can also discover evidence that challenges the theory.

A few common issues that have occurred about scientific theories:

i. Theories are not the same thing as opinions and beliefs.

ii. All theories are not equally plausible.

iii. A measure of a good theory is not the number of people who believe it to be true.

The Biophysical Model

Biopsychosocial Model—A means of explaining behavior as a product of biological, psychological, and socio-cultural factors.

- Biological influences on our behavior involve brain structures and chemicals, hormones, and external substances such as drugs.
• This ability to move your auditory attention is influenced by another midbrain structure, the *inferior colliculus* (plural *colliculi*).

• Like the hindbrain, structures in the midbrain do not act as independent units; rather, they are part of much larger networks. This concept is powerfully illustrated by the *substantia nigra*. This midbrain area has connections to structures in the forebrain (discussed below); this network of dopamine-releasing cells is involved with the control of movements. Parkinson’s disease—a condition marked by major impairments in voluntary movement—is caused by a loss of the dopamine-producing cells in this network.

**The Forebrain: Emotion, memory, and Thought**

**Forebrain**—The most visibly obvious region of the brain, consists of all of the neural structures that are located above the midbrain, including all of the folds and grooves on the outer surface of the brain; the multiple inter-connected structures in the forebrain are critical to such complex processes as emotion, memory, thinking, and reasoning.

• The forebrain also contains spaces called *ventricles*. Although the ventricles appear hollow, they are filled with cerebrospinal fluid, a solution that helps to eliminate wastes and provides nutrition and hormones to the brain and spinal cord. Cerebrospinal fluid also cushions the brain from impact against the skull.

**Basal ganglia**—A group of three structures that are involved in facilitating planned movements, skill learning, and integrating sensory and movement information with the brain’s reward system.

• The basal ganglia form networks that promote and inhibit movements. These two networks interact to allow us to have our different muscles work together in the correct sequence rather than having them “flex” at random times. People who are very practiced at a specific motor skill, such as playing an instrument or riding a bicycle, have actually modified their basal ganglia through practice to better coordinate engaging in the activity.

• Damage to the basal ganglia can lead to movement disorders like Parkinson’s disease—involving resting tremors and problems initiating and coordinating movements.

• It can also lead to Huntington’s disease—involving uncontrollable movements of the body, head, and face.

• The basal ganglia are also affected in people who have Tourette’s syndrome—a condition marked by erratic and repetitive facial and muscle movements (called *tics*), heavy eye blinking, and frequent noise making such as grunting, snorting, or sniffing. The excess dopamine that appears to be transmitted within the basal ganglia contributes to many of the classic Tourette’s symptoms.

• Some parts of the basal ganglia are also involved in emotion, particularly experiences of pleasure and reward.
Like EEG, MEG records the electrical activity of nerve cells just a few milliseconds after it occurs, which allows the researchers to record brain activity at nearly the instant a stimulus is presented.

Like ERPs, MEGs do not provide a detailed picture of the activity of specific brain areas, so it is difficult to insolate where in the brain the activity occurred.

**Positron Emission Tomography (PET)**—The type of scan in which a low level of radioactive isotope is injected into the blood, and its movement to regions of the brain engaged in a particular task is measured.

- This method works under the assumption that active nerve cells use up energy at a faster rate than do cells that are less active. As a result, more blood will need to flow into those active areas in order to bring more oxygen and glucose to the cells. If the blood contains a radioactive isotropy (as in a PET study), more radioactivity will be detected in areas of the brain that were active during that period of time.
- The greatest strength of PET scans is that they show metabolic activity of the brain. It also allows researchers to measure the involvement of specific types of receptors (e.g., dopamine receptors) in different brain regions while people perform an experimental task.
- The drawback of these tests is that it takes a long time to acquire, at least two minutes; this can be a problem when you want to see a moment by moment activity of the brain.

**Functional Magnetic Resonance Imaging (fMRI)**—Allows researchers to view the brain and see which areas are activated while you perform different tasks, such as viewing words or viewing emotional pictures.

- fMRIs are being used to examine clinical issues, including psychological disorders.
- It is also being used to examine brain activity in neurological patients; psychologists and medical personnel look at what areas of the brain are active when a person is performing different tasks such as remembering lists of words.
- If the patterns actively deviate from normal patterns, then there may be a cause for concern.
- fMRI takes multiple static pictures very rapidly, to see how the brain functions.

### 4.1 SENSATION AND PERCEPTION AT A GLANCE

**Sensing the World Around Us**

**Sensation**—The process of detecting external events by sense organs and turning those stimuli into neural signals.

- We take information from the world through those 5 sensations.

**Perception**—Involves attending to, organizing, and interpreting stimuli that we sense.

- Perception includes recognizing the sounds as a human voice and understanding that certain colors, shapes, and motion together make up the image of a human being walking toward you.

**Transduction**—Specialized receptors transform the physical energy of the outside world into neural impulses.
4.2 THE VISUAL SYSTEM (Please refer to the slides because some lots of important information is located there)

*The Human Eye*

*The Structure of the Eye*
repair any wear and tear experienced during the day’s activities.

- A lack of sleep eventually leads to cognitive decline, emotional disturbances, and impaired functioning of the immune system. For some species, sleep deprivation can be more detrimental—even fatal—than food deprivation.
- Although there is good evidence supporting the restore and repair hypothesis, it does not account for all the reasons why we sleep.

**Preserve and Protect Hypothesis**—Suggests that two more adaptive functions of sleep are preserving energy and protecting the organism from harm.

**Sleep Deprivation and Sleep Displacement**

**Sleep Deprivation**—Occurs when an individual cannot or does not sleep.

- In addition to feelings of fatigue, researchers have discovered a number of specific impairments resulting from being deprived of sleep. These include difficulties with multitasking, maintaining attention for long periods of time, assessing risks, incorporating new information into a strategy (i.e., “thinking on the fly”), working memory (i.e., keeping information in conscious awareness), inhibiting responses, and keeping information in the correct temporal order.

**Sleep Displacement**—Occurs when an individual is prevented from sleeping at the normal time although she may be able to sleep earlier or later in the day than usual.

**Jet lag**—Is the discomfort a person feels when sleep cycles are out of synchronization with light and darkness.

**Theories of Dreaming**

**The Psychological Approach**

**Manifest Content**—Involves the images and storylines that we dream about.

- In many of our dreams, the manifest content involves sexuality and aggression, consistent with the view that dreams are a form of wish fulfillment. However, in other cases, the manifest content of dreams might seem like random, bizarre images and events.

**Latent Content**—The actual symbolic meaning of a dream built on suppressed sexual or aggressive urges.

- Freud would argue that these images are anything but random; instead, he believed they have a hidden meaning.

**The Activation-Synthesis Hypothesis**

**Activation–Synthesis Hypothesis**—Suggests that dreams arise from brain activity originating from bursts of excitatory messages from the pons, a part of the brain stem.

- This electrical activity produces the telltale signs of eye movements and the EEG activity during REM sleep; moreover, the burst of activity stimulates the occipital and temporal lobes of the brain, producing imaginary sights and sounds, as well as numerous other regions of the cortex. Thus, the brain stem initiates the *activation* component of the model.
similar to the stimulus present during original learning. In this case, a pigeon who learned to peck a key after hearing a 1000-Hz tone may attempt to peck the key whenever any tone is presented.

- Discrimination and generalization in classical conditioning were due to the strengthening of synapses as a result of simultaneous firing, in operant conditioning, the mechanism appears to be dopamine-secreting neurons.

**Delayed Reinforcement & Extinction**

- As early as 1911, Thorndike noted that reinforcement was more effective if there was very little time between the action and the consequence.
- A study with pigeons, researchers found that the frequency of responses (pecking a button) decreased as the amount of time between the pecking and the reward (a food pellet) increased.
- This effect of *delayed reinforcement* influences a number of human behaviours as well. For instance, drugs that have their effect (i.e., produce their rewarding feeling) soon after they are taken are generally more addictive than drugs whose effects occur several minutes or hours after being taken.
- Sometimes, however, a reinforcer is not just delayed; it doesn’t occur at all.

**Extinction**—The weakening of an operant response when reinforcement is no longer available.

- If you lose your Internet connection, for example, you will probably stop trying to refresh your web browser because there is no reinforcement for doing so.
- Extinction is related to dopamine.

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**Table 6.3 - Comparing Discrimination, Generalization, and Extinction in Classical and Operant Conditioning**

<table>
<thead>
<tr>
<th>PROCESS</th>
<th>CLASSICAL CONDITIONING</th>
<th>OPERANT CONDITIONING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrimination</td>
<td>A CR does not occur in response to a different CS that resembles the original CS.</td>
<td>There is no response to a stimulus that resembles the original discriminative stimulus used during learning.</td>
</tr>
<tr>
<td>Generalization</td>
<td>A different CS that resembles the original CS used during acquisition elicits a CR.</td>
<td>Responding occurs to a stimulus that resembles the original discriminative stimulus used during learning.</td>
</tr>
<tr>
<td>Extinction</td>
<td>A CS is presented without a US until the CR no longer occurs.</td>
<td>Responding gradually ceases if reinforcement is no longer available.</td>
</tr>
</tbody>
</table>

**Reward Devaluation**

- Scientists have found that behaviors do change when the reinforcer loses some of its appeal.
- In a typical experiment, rats are trained to press two different levers, each associated with a different reward (e.g., two different rewarding tastes). If the experimenters pre-feed the animal with one of these two tastes, they will crave it less than the other; in other words, its reward will be devalued compared to the other taste. Researchers consistently find a decrease in the response rate for the “devalued” reward, whereas the other reward remains largely unaffected.
• Not all of the information that enters the STM is retained; a large proportion of it is lost forever. Instead, only a small amount of information from STM is encoded or transformed into memory traces.

• Encoding allows information to enter the final memory store in the Atkinson-Shiffrin model. This store, the long-term memory (LTM), holds information for extended periods of time, if not permanently. Unlike short-term memory, long-term memory has no capacity limitations. All of the information that undergoes encoding will be entered into the LTM.

• Once entered into the LTM, the information needs to be organized. Researchers have identified at least two ways in which this occurs. One is based on semantic categories that the items belong to (i.e. grouping animals). The other is based on the sounds of the word and how it looks (this explains the tip of the tongue (TOT) phenomenon, when you are able to retrieve similar sounding words or words that start with the same letter, but can’t quite retrieve the word you actually want).

• Of course, having the information in the LTM doesn’t necessarily mean that you can access it whenever you want. If this were the case, everyone would have a perfect grade point average, and nobody would be impressed by trivial knowledge. Instead, the likelihood that a given piece of information will undergo retrieval – the process of accessing memorized information and returning it to the short-term memory – is influenced by a number of different factors, including the quality of the original encoding and the strategies used to retrieve the information.

**Distinguishing Short-Term from Long-Term Memory Stores**

• While the Atkinson-Shiffrin model is very convenient and easy to understand, the problem with it is that the real world rarely involves 30-second blocks of time filled with 7 ± 2 pieces of information followed by a short break to encode them. Instead, we are often required to use both the STM and the LTM at the same time.

• The distinction between LTM and STM can be revealed with a simple experiment; imagine a group of students studied a list of 15 words and then immediately tried to recall each word. The serial position curve – the U-shaped curve that would most likely depict the results. It can be explained by the serial position effect: in general, most people will recall the first few items from a list and the last few items, but only an item or two from the middle. This finding holds true for many types of information.

  o The first few items are remembered relatively easily (known as the primacy effect) because they have begun the process of entering the LTM. The last few items are also remembered well (known as the recency effect); however, that’s because those items are still within our STM. The ones in the middle are difficult to determine, as some can be encoded into the LTM, and other lost entirely.

• The dip in performance in the middle of a serial position curve can be explained by two different mechanisms. First, the items at the beginning of the list produced proactive interference, a process in which the first information learned (e.g. in a list of words) occupies memory, leaving fewer resources left to remember the newer information.
The last few items on the list create **retroactive interference** – that is, the most recently learned information overshadows some older memories that have not yet made it into the LTM.

- Damage to the hippocampus will prevent the transfer of memories from the STM to LTM.

**The Working Memory Model: An Active STM System**

- **Rehearsal** is the repeating of information until you do not need to remember it anymore. This process involves **working memory**, a model of short-term remembering that includes a combination of memory components that can temporarily store small amounts of information for a short period of time.

  - A key feature of working memory is that it recognizes that stimuli are encoded simultaneously in a number of different ways. It can be subdivided into three storage components.

**The Phonological Loop**

- The **phonological loop** is a storage component of working memory that relies on rehearsal and that stores information as sound, or auditory code. It engages some portions of the brain that specialize in speech and hearing, and it can be very active without affecting memory for visual and spatial information.

  - Based on the **word-length effect**, we know that people remember more one-syllable words than four or five-syllable words in a STM task.

  - Research indicates that working memory can store as many syllables as can be rehearsed in approximately two seconds, and that this information is retained for approximately 15 seconds.

**The Visuospatial Sketchpad**

- The **visuospatial sketchpad** is a storage component of working memory that maintains visual images and spatial layouts in a visuospatial code. It keeps you up to date on where objects are around you and where you intend to go.

  - It engages portions of the brain related to the perception of vision and space, and does not affect memory for sounds. Just as the phonological store can be gauged at several levels, items stored in the visuospatial memory can be counted based on shapes, colors and textures.

  - Research has consistently shown that a square-shaped block painted in two colors is just as easy to recognize as the same-shaped block painted in one color. Therefore, visuospatial working memory may use a form of chunking called **feature binding**, combining visual features into a single unit.

  - After visual feature binding, visuospatial memory can accurately retain approximately four whole objects, regardless of how many individual features one can find on those objects.

**The Episodic Buffer**
A number of mnemonic devices are based on the principle of **dual coding**, which occurs when useful information is stored in more than one form—such as a verbal description and a visual image, or a description and a sound—and it regularly produces stronger memories than the use of one form alone.

- It leads to the information receiving deeper processing; this is because the additional sensory representations create a larger number of memory associations. This subsequently leads to a greater number of potential retrieval cues that can be accessed later.
- The simplest explanation for the dual-coding advantage is that twice as much information is stored.

While these mnemonic devices can help with simple memorization, they may not necessarily improve your understanding of the material. Method of improving understanding include **desirable difficulties**, which are techniques involving spacing out studying rather than cramming, or studying material in varying orders.

No matter how an individual studies, they should always take advantage of the **testing effect**, the finding that taking practice tests can improve exam performance, even without additional studying.

### 7.3 CONSTRUCTING AND RECONSTRUCTING MEMORIES

**How Memories Are Organized and Constructed**

- As it turns out, much of the way we store memories depends on our tendency to remember the gist of things.

**The Schema: An Active Organization Process**

- The gist of a story gives us “the big picture”, or a general structure for the memory; details can be added around that structure. This gist is often influenced by **schemas**, organized clusters of memories that constitute one’s knowledge about events, objects and ideas.
  - Whenever we encounter familiar events or objects, these schemas become active, and they affect what we expect, what we pay attention to, and what we remember (e.g. when reminded about doing laundry, your personal collection of concepts and memories regarding laundry activates and would be your **laundry schema**).

- Research indicates that we remember events using **constructive memory**, a process by which we first recall a generalized schema and then add in specific details. To this end, schemas can affect our memory in two ways:
  - **Organization**: when we encounter a new situation, some objects and events will undoubtedly fit our schemas (i.e. our expectations) better than others. When the new information makes sense, it can be easier to recall, but it may be difficult to recognize or report exact details.
intelligence. As a result, Galton’s approach to measuring intelligence was generally abandoned.

**Intelligence and thinking: The Stanford-Binet test**

- Alfred Binet, argued that intelligence should be indicated by more complex thinking processes, such as memory, attention, and comprehension.
- **intelligence** – *the ability to think, understand, reason, and adapt to or overcome obstacles*
- Binet and Simon created different tasks (30 of them) for the children in school, and ranged them from least difficult to most difficult; they gave them to children from different age groups and recorded an average score for each. Binet argued that the test score measured the child’s mental age.

**Mental Age** — *the average intellectual ability score for children of a specific age*. For example, if a 7-year-old’s score was the same as the average score for 7-year-olds, she would have a mental age of 7, whereas if it was the same as the average score for 10-year-olds, she would have a mental age of 10, even though her chronological age would be 7 in both cases. A child with a mental age lower than her chronological age would be expected to struggle in school and to require remedial education.

- The practicality of Binet and Simon’s test was apparent to others, and soon researchers in the United States began to adapt it for their own use. Lewis Terman at Stanford University adapted the test for American children and established average scores for each age level by administering the test to thousands of children. In 1916, he published the first version of his adapted test, and named it the Stanford-Binet Intelligence Scale — *a test intended to measure innate levels of intelligence*.

**Stanford-Binet test** — *a test intended to measure innate levels of intelligence*.

- Terman adopted William Stern’s concept of the **intelligence quotient**, or IQ, a label that has stuck to the present day. *IQ is calculated by taking a person’s mental age, dividing it by his chronological age, and then multiplying by 100.*

- One other odd feature of both Binet’s mental age concept and Stern’s IQ was that they didn’t make much sense when you applied them to adults. For example, is a person with the mental age of 45 not as smart as someone with the mental age of 70? Similarly, imagine a 30-year-old with a mental age of 30; her IQ would be 100. But in 10 years, when she was 40, if her mental age stayed at 30, she would have an IQ of only 75. Given that IQ scores remain constant after about age 16 (Eysenck, 1994), this would mean that adults get progressively less smart with every year that they age.

- To adjust for this problem, psychologists began to use a different measure, **deviation IQ**, for calculating the IQ of adults (Wechsler, 1939). The deviation IQ is calculated by comparing the person’s test score with the average score for people of the same age. In order to calculate deviation IQs, one must first establish the norm, or average, for a population.

**The Wechsler Adult Intelligence Scale**

- David Wechsler developed an IQ test that was specialized for adult populations. After much research, this evolved into the **Wechsler Adult Intelligence Scale (WAIS)**, which
To account for both periods of slow and rapid growth, development is seen as a progression of abrupt transitions in physical or mental skills, interspersed with slower, more gradual change. Psychologists often describe this pattern of change as a series of stages. The transition from stage to stage involves rapid shifts in thinking and behaving, and fundamental shifts in the types of abilities a child can perform.

The Importance of Sensitive Periods
- A sensitive period is a window of time during which exposure to a specific type of environmental stimulation is needed for normal development of a specific ability. For example, to become fluent in their native language, infants need to be exposed to speech during their first few years of life.

Zygotes to Infants: From One Cell to Billions
Fertilization and Gestation
- Lives begin with a single sperm cell (out of approximately 200 million) that is able to find its way into the ovum. This fusion of male and female sex cells allows for the creation of a zygote, the initial cell formed when the nuclei of egg and sperm fuse.
- The creation of a zygote is the beginning of the germinal stage, the first phase of prenatal development, which spans from conception to two weeks.
  - Shortly after it forms, the zygote begins to continually divide into more and more cells, and then embeds itself into the lining of the uterus.
- The embryonic stage spans weeks two through eight, during which time the embryo begins developing major physical structures such as the heart and nervous system, as well as the beginnings of arms, legs, hands, and feet.
- The fetal stage spans week eight through birth, during which time the skeletal, organ, and nervous systems become more developed and specialized.

Fetal Brain Development
- During the final months of pregnancy, a fatty tissue called myelin builds up around developing nerve cells, a process called myelination. Myelin insulates nerve cells, enabling them to conduct messages more rapidly and efficiently.
- At birth, a newborn has an estimated 100 billion neurons and a brain that is approximately 25% the size and weight of the adult brain.
  - This means that the infant has created virtually all neurons that will comprise the adult brain, growing up to 4000 new neurons per second in the womb.
  - The things missing from a newborn’s brain, however, is the connections between these neurons.

Nutrition, Teratogens, and Fetal Development
Eating and the Social Context

- In addition to physical and attentional influences, food intake is affected by social motives as well.
- Whether the presence of other people increases or decreases our motivation to eat is influenced by the social situation.

Here are a few examples:

1. Social facilitation: Eating more. Dinner hosts (and grandmothers) may encourage guests to take second and even third helpings, and individuals with a reputation for big appetites will be prodded to eat the most. Perhaps the strongest element of social facilitation is just the time spent at the table: The longer a person sits socializing, the more likely he or she is to continue nibbling.

2. Impression management: Eating less. Sometimes people self-consciously control their behaviour so that others will see them in a certain way—a phenomenon known as impression management. For example, you probably know that it is polite to chew with your mouth closed. Similarly, the minimal eating norm suggests that another aspect of good manners—at least in some social and cultural settings—is to eat small amounts to avoid seeming rude.

3. Modelling: Eating whatever they eat. At first exposure to a situation, such as a business dinner, a new employee may notice that no one eats much and everyone takes their time. The newcomer will see the others as models, and so he too will restrain his eating. Later, he may drop by his friend’s family reunion where everyone is having a second or third helping and undoing their belts so their stomachs can expand more. In this case, he will be likely to eat more, even if he is already feeling full.

Clearly, eating is not just a matter of maintaining homeostasis. It is best described as a behaviour motivated by biological, social, and individual psychological factors.

Disorders of Eating

Obesity

Obesity—A disorder of positive energy balance, in which energy intake exceeds energy expenditure.

- Over 60% of Canadian adults could be classified as overweight.
- Obesity rates were lowest in Quebec, and highest in Atlantic Canada, the Territories, and Saskatchewan.
- So, why are obesity rates so high? There is no simple answer to this question.
- One issue is the huge variety of foods available.
- A second issue relates to our discussion of the evolutionary need to crave fatty foods, and to store the excess energy in our bodies in case no food is available later.
- We still crave fatty and energy-rich foods—however, for most people, there are few
• Collectivist ppl showed activity in this area when making judgement about themselves based on others
• Culture is shown in our brain
• Many studies to see connection between biological functioning, personalities, and culture

**How Genes Affect Personality**

• Not sure how much nature vs. nurture has a role in your personality

**Twin Studies**

• How do you know if pattern of personality is due to shared environment or shared genes?
• Identical twins show more personality similarity than fraternal twins
• We know that this similarity isn’t based on environment because a study showed that identical twins raised in separate house still share personality traits, more similar than fraternal twins raised in the same house
  • Identical twins raised in the same house are just as similar as ones raised in different house
  • Adoptive studies prove this as well:
    • Adoptive siblings are no more similar than two, people picked off the street
• The conclusion is that most of the time, the genes shape personality more than the parents or the environment (except if parents expose kid to something out of the norm and drastic like abuse)

**Working the scientific literacy model: from molecules to personality**

• Research has shown two versions of the serotonin transporter either make you have high or low serotonin levels
• They do this by relate survey and questionnaire results to DNA results, but these differences may be due to different varieties of self report surveys
• Another way is to take DNA of people and conduct experiment
  • They look at negative, positive, and neutral images simultaneously
  • People with one version of gene look at negative and other version look at positive
  • Looks like short copies of gene produces anxiety and attention to negative
  • Many genes interact with environment to produce trait - NOT one gene causing a trait

**The role of evolution in personality**

• We may share personality aspects with other species

**Animal Behaviour: The evolutionary Roots of personality**

• Personalities have been seen in other animals
• Bigger posterior angulate cortex - empathy and perspective taking

• **Conscientiousness:**
  • Larger middle frontal gyrus in left prefrontal cortex - working memory processes and carrying out action you planned

• **Openness to experience:**
  • More activation in dorsolateral prefrontal cortex - creativity and intelligence
  • No specific brain areas equal one trait

### 13.1 THE POWER OF THE SITUATION: SOCIAL INFLUENCES ON BEHAVIOUR

**The Person and the Situation**

• The reason why people act is largely based on social factors not just individual choices
• Bad things happen not only because of bad people but because of larger social factors that influence them to do bad things
• You also have to take into account a person free will
• Social psychologist try to understand social reality by studying the interaction between the person and situation
  o Kurt lewin said this as B=f(P,E) - behaviour is a function of the person and the environment
• Social psychology looks at the present and the forces at work at that moment

**Mimicry**

• a way that our behaviour is influenced by the people around us is mimicry
• **Mimicry** - taking on for ourselves the behaviours, emotional displays and facial expressions of others
  o This has to do with following the pack
  o Our communication and behavioural coordination occurs through explicit and implicit processes (conscious and unconscious)
  o The body and nonverbal, movement based activities are fundamental to human consciousness
  o This leads to the point that *who we are is constantly shaped and patterned by other people*

• **Chameleon effect** - describes how people mimic other non consciously, automatically copying other behaviours even without realizing it
  o This is a sort of social glue
  o Mimicry is a other set of interdependencies between ourselves and other people - our social nature as a species is programmed right into our automatic behaviour patterns
**Changing People’s Behaviour**

- There are four approaches to changing the public's behaviour on a large scale
  - Technological - the right technology has to be put in place for them to change (e.g. alternatives to gas for them to stop using it. Or more garbage cans for them to stop littering)
  - Legal - focus on policy change by getting the laws right
  - Economic - focuses on taxes and pricing by making the right thing to do cheaper and the wrong thing to do more expensive
  - Raising awareness - focuses on information by educating everybody

- A problem with the first three is that you would need support from other people to do them
- The raising awareness approach will change peoples beliefs upon which attitudes are based, which means you have to give people information.
  - This is the explanation for PA announcements, pamphlets, billboards, etc.
- Learning how to communicate effectively is a major focus of psychology

**Persuasion: Changing Attitudes Through Communication**

- *Elaboration likelihood model* - predicts that when audiences are sufficiently motivated to pay attention to a message (i.e. they care about the issue) and they have the opportunity for careful processing (i.e. they have the cognitive resources available to understand the message) they will be persuaded by the facts of the argument, the substance; when either of these two factors, motivation and opportunity, are missing, people will be persuaded by other factors.
  - According to this information can appeal to people through two general routes:
    - **Central route to persuasion** - occurs when people pay close attention to the content of a message, evaluate the evidence presented, and examine the logic of the arguments.
      - If its compelling, they will be convinced and believe in the message
      - Central route is strong and long lasting
    - **Peripheral route to persuasion** - persuasion depends on other features that are not directly related to the message itself, such as the attractiveness of the person delivering the information, or the sheer amount of information, such as the number of arguments made.
      - Its about style not substance
      - Not as powerful but easier

**Using the Central Route Effectively**

- If you’re confident in your facts and they make rational and logical sense then central route is better
Also the second request doesn’t seem so bad

**Consistency**

- **Foot in the door technique** - which involved making a simple request followed by a more substantial request
  - Idea is that once you get them to say yes to a first request it’s easy to get them to say yes to another one
  - The initial request can be tiny or hard to refuse
  - You then get pulled into agree to the bigger request

**The Attitude Behaviour Feedback Loop**

- **Cognitive dissonance theory** - when we hold inconsistent beliefs, this creates a kind of aversive inner tension, or dissonance; we are then motivated to reduce this tension in whatever way we can, often by simply changing the beliefs that created the dissonance in the first place
- E.g. a cult that believed in an alien race coming to end earth on a date. When the date came and past they changed their belief and said since they were going to welcome the aliens, they decided not destroy earth.
- Another example: ppl did study that was boring and then given either 1 or 20 dollars to tell someone outside that it's exciting
  - The ppl who got 20 had a good excuse (because they got money)
  - The ppl who got 1 had nothing to say so they changed their belief and said that the study was actually fun!
- Cognitive dissonance is created when we make difficult choices between attractive alternatives
- Dissonance theory explains why people partake in hazing - they have dissonance because they have self respect and normally wouldn’t do ridiculous things, but justify it by saying that they get to be part of the organization (frat, etc.)
- Not the same across cultures
  - E.g in collectivist societies the need for self consistency is not strong because the self is fluid as per social situations so they experience less dissonance when making choices
- The spillover effect - appeal to whatever values people have and encourage the adoption of whatever behaviours seem most likely. This will then lead to bigger actions

**14.2 STRESS AND ILLNESS**

**Stress** — A psychological and physiological reaction that occurs when perceived demands exceed existing resources to meet the demands.

- Stress refers to both events (stresors) and experiences in response to these events (the stress response). Stressors can take a wide variety of forms (acute or chronic).
- They can have a positive or negative effect on performance.
• Some people with bipolar disorder experience only few episodes of mania in their lives, but some people might have several in a year.

Cognitive and Neurological Aspects of Depression
• Depression effects cognition and emotion.
• Individuals can emphasize negative, self-defeating characteristics about themselves. They develop a pessimistic explanatory style.

Pessimistic (or negative) Explanatory Style—A set of habitual ways of explaining events to oneself which tend to be dysfunctional.
• Individuals tend to make personal attributions (internalizing), for the event, blaming themselves excessively. Ex: I’m so stupid! It’s my fault!
• Depressed individuals also tend to make stable attributions, assuming that the situation is going to persist. Ex: It’s always going to be this way, things will never change.
• After, they tend to make global attributions, expanding the impact of the negative event into other domains or into overall life. Ex: Thinking that it applies to everything, not just the current situation. They think they ruined everything.

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• Two major parts of the brain found to be related to depression is: the limbic system, and the dorsal of the frontal cortex.
• Serotonin, dopamine, and neuropenephrine have been found to be involved in depression.
• People with depression are at higher risk for many illness, as well as cardiovascular disease and higher risk or mortality at any given time.
• Depending how you inherit the gene 5-HTT (serotonin), you can be predisposed to depression. Inheriting “short” copies of the gene puts you more at risk.

Sociocultural Influences on Mood Disorders
• Socioeconomic and environmental factors can play a big role in mood disorders.
• Poor neighbourhoods are associated with higher stress levels.

Suicide
• Among Canadian youth, suicide is the second leading cause of death.
• It is 4x more likely among males than females, and 2-3x more likely among Native Americans and European Americans than any other ethnicity.
• Suicide rate for people 65 and older is nearly 60% higher than for teens; however, many people think it is the opposite.
• In teens, the most significant risk factor are mood disorders, stressful events, and family history of mood disorders.
• Families have reported that in the few weeks leading up to the suicide, the individual has expressed recognizable warning signs.
15.4 SCHIZOPHRENIA

• It is possible to live a productive, peaceful and generally happy life with schizophrenia like John Nash once he got help
• One of the more devastating psychological illnesses
• Severe cases = loss of basic functioning
• It is universal

Symptoms and Types of Schizophrenia

• Brain disease that causes a person to experience significant breaks from reality, lack of integration of thoughts and emotions, problems with attention and memory
• Symptoms can escalate gradually or rapidly
• Misguided beliefs:
  • When they have more than one personality it is schizophrenia
  • Solely an organic brain disease that only responds to medication
    • IT is actually strongly affected by family support and life events that cause stress
• Three distinct phases:
  • Prodromal
  • Active
  • Residual
• Tend to occur in sequence but may cycle all 3 many times
• In the prodromal phase, people become easily confused, has difficulty organizing thoughts, lose interest and begin to withdraw from friends and family, lose normal motivations, withdraw from life and spend an increased amount of time alone deeply engrossed in own thoughts
  • Not uncommon for people to get upset thinking that the person is lazy or irresponsible
• In the active phase, people typically experience delusional thoughts, hallucinations, or disorganized patterns of thoughts, emotions and behaviors- transitions to the residual phase
• Residual phase, in which peoples predominant symptoms have appeared lessened considerably, and they may simply be withdrawn, have trouble concentrating and lack motivation
• There is lots of variety in terms of the progression
  • Some people cycle through the three stages a couple times in their lives as others do it repeatedly
    • Ability to function normally seems to decrease after each active phase they go through